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October, 1952

SOAP and Sanitary Chemicals

In this issue...

Modern metal cleaners—specialization emphasized

• • •

Floor waxes for conductive surfaces under development

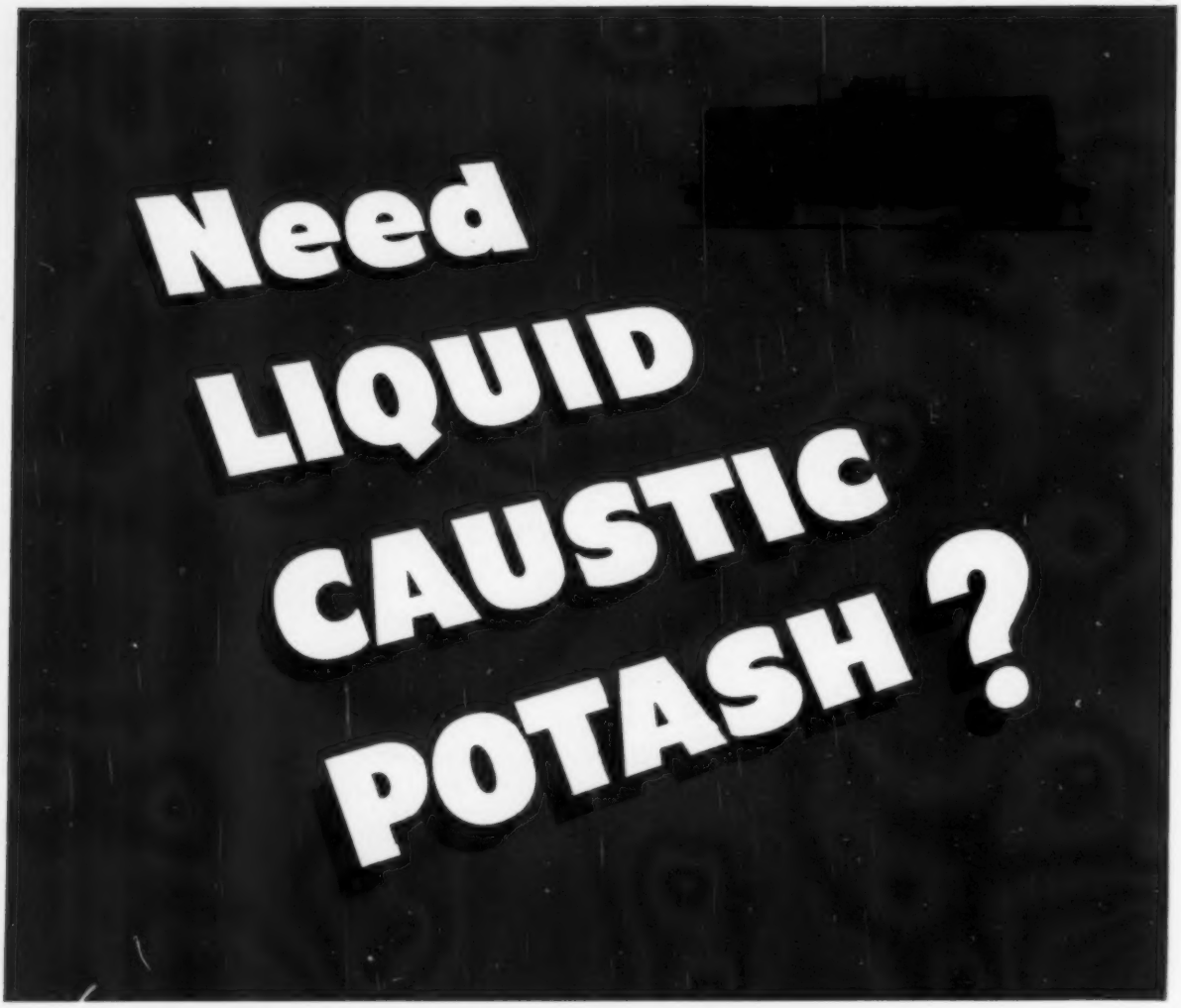
• • •

Food plant insecticides—wrong method of selling?

• • •

Synthetic detergents cut bacteria in dishwashing

Cover photo . . . New "Dainty Deodorant Soap" of Rexall Drug Co., Boston, first soap on American market containing "Actamer," Monsanto's new bacteriostat ingredient. Soap is made by Hewitt Soap Co., Dayton, Ohio.



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Candy's Wax with LUDOX* added

Candy's NEW NAME for the new floor treatment for Increased Anti-Slip Greater Durability Lower Floor Maintenance Cost

2 GRADES

CAND-DOX #CS
Originally offered as CANDY'S SUPREME Special WR-AS in July 1950

CAND-DOX #BB
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CAND-DOX #CS is slighty more durable and higher priced than CAND-DOX #BB in like percentage of total solids.

CAND-DOX floor treatments represent the finest products available where a higher than minimum recognized standard of anti-slip quality is desired. The resultant films from the use of these products are *HARD*, non-tacky, and will withstand wear, dirt and discoloring traffic marks.

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WATER RESISTANCE and REMOVABILITY in proper balance are very important in every maintenance program. In the development of the wax emulsion bases that go into CAND-DOX floor treatments, the important all-around high qualities of our (Standard) CANDY'S SUPREME, BRIGHT BEAUTY and other well known and accepted waxes were taken into consideration and accomplished in the final CAND-DOX products containing the new bases plus additive.

BEAUTY of floors maintained with CAND-DOX floor treatments, which are both hard and very anti-slip, is no less than remarkable and equal to the lustre for which our products have long been famed. The same buffing can be applied, if desired, and the same gloss will result.

Our policy in regard to use of new additives to our floor waxes has always been clear-cut . . . if a definite improvement can be accomplished we endeavor to formulate and combine new ingredients in such a way as to *conform to our very high standards of product function.* These standards in no case are ever sacrificed to climb on any "bandwagon" of *sales* appeal.

The laboratory work in ours or any organization is very important and the starting point for research and development of new useful products. However, FIELD TESTING is the real proof of the real value of any floor treatment. CAND-DOX floor treatments have been thoroughly field tested and are now being sold in quantity by many of our distributors, with success—again proving merit in FIELD USE.

** CAND-DOX contains CANDY'S wax emulsion with LUDOX* Colloidal silica added in such proportion as to *fully* deliver the usefulness of this additive to floor wax. *Trademark of E. I. du Pont de Nemours & Co., (Inc.) Reg. U. S. Pat. Off.

CAND-DOX is available for private brand resale and is sold only through distributors except for experimental accounts in Chicago essential to research.

Why not write us today for *free* samples and prices so that you can make your own FIELD TESTS?

The most complete line of water emulsion waxes of the highest quality available anywhere

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CANDY'S DELUXE
BRIGHT BEAUTY (Standard)
CANDY'S #640
CANDY'S SUPREME Special WR
#CS CAND-DOX
#BB CAND-DOX

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Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

SOAP and Sanitary Chemicals

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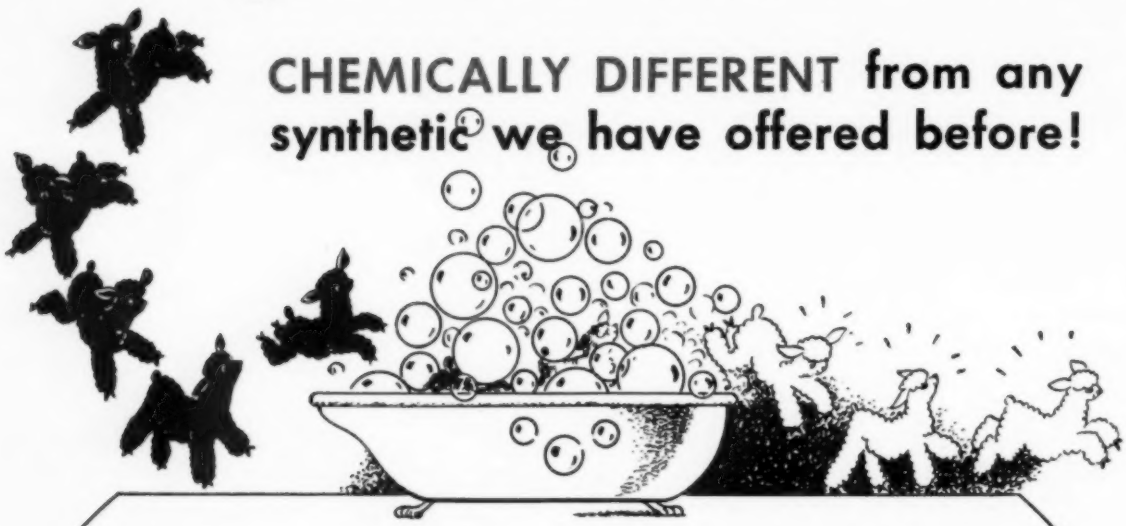

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News of MONSANTO Chemicals

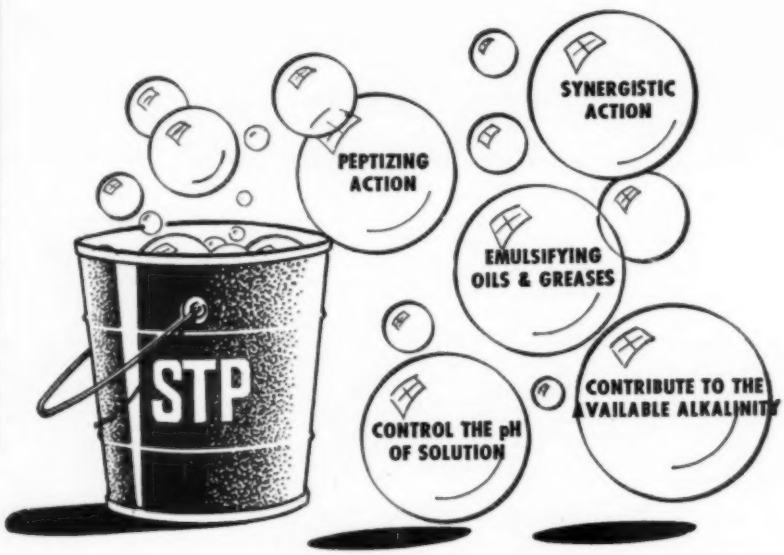
OF SPECIAL INTEREST — TO FORMULATORS

IMPORTANT NOTICE TO ALL FORMULATORS

WATCH NEXT ISSUE FOR A MAJOR ANNOUNCEMENT ABOUT SANTOMERSE

There will be an important new development in Santomerse wetting agents. Look for the details in this same space in our next issue. It may be the news that will help you obtain improved quality in your processing and products.

Synergistic Action and Peptizing Action of Sodium Tripoly Phosphate Aids Formulators



Improved Alkyl Benzene Available Commercially

An improved alkyl benzene is now being produced in commercial quantities at Monsanto, Illinois. The new modification will greatly enhance the value of this useful chemical to the soap and sanitary industry.

Many producers of surface active agents are already using this basic raw material. They have found that this compound has two major advantages. First, it produces a detergent which has highly effective sudsing, detergent and wetting properties. Second, it is low in cost and economical to use.

These special advantages have brought alkyl benzene into the forefront as one of the key ingredients in many modern detergency formulations. And now with the improved modification made available by Monsanto, the usefulness of this compound is expected to increase by leaps and bounds. If you would like to test a sample in your own laboratories, use the coupon at the bottom of the page.

The experience obtained under actual operating and processing conditions clearly shows the advantages of sodium tripoly phosphates as a major aid in the formulation of detergents.

Typical of the effectiveness of STP is its synergistic action. Synergism may be defined as "a cooperative action of two or more separate agencies such that the combined effect exceeds the average of the two effects taken separately."

To make this a little clearer, let's look at an example. If we use a standard wetting agent and assign it a detergency of 100, we can assign STP a detergency of 75 on the same scale. This means under ordinary circumstances you would expect an average detergency of $\frac{100 + 75}{2}$ or 87.5 if the two products were mixed together.

Actually the detergency of such a mixture is not 87.5, but nearly 110. This boost in detergency we call synergistic action. It is one of the main reasons why STP is so important to many formulators. With it they have an ideal means of boosting detergency at a relatively low cost for the effect they receive.

Another important advantage of STP is its peptizing action. This term refers to the ability of the phosphate to keep small particles of solids suspended in a water solution. Such a feature is important because it means dirt particles will not be re-deposited during the cleaning and rinsing cycle. Instead, swift rinsing action is obtained which thoroughly cleans the material being washed.

Besides peptizing and synergistic action, STP and the other sodium poly phosphates aid in emulsifying oils and greases . . . control or buffer the pH of solution . . . contribute to the available alkalinity. It is this versatility of action that has made these products so popular with a wide number of users. If you have any questions on their use why not contact the technical service department of Monsanto's Phosphate Division.

Calcium Repression Test Measures Sequestering Action

Poly phosphates such as STP and TSPP have the unique and valuable property of being able to sequester certain metallic ions such as calcium and magnesium. Sequestering ability when used in this sense means the inactivation of the calcium and magnesium ions in solution, or rendering them non-reactive.

It is this ability which makes poly phosphates so valuable in softening water by preventing the precipitation of calcium or magnesium soaps.

To test this sequestering ability of poly phosphates several methods have been devised. One of the most popular is the Calcium Repression Test.

This is actually a measure of the ability of a poly phosphate to regenerate or redissolve an insoluble calcium or magnesium soap. The method is based on the use of a standard soap solution which is added to a given amount of water containing a specified amount of calcium or magnesium hardness. An insoluble soap is formed at this time and when the solution is shaken vigorously no suds appear.

Next a solution of phosphate being tested is added step-wise to the soap solution until a stable suds is obtained. When the suds remain stable after repeated shakings, the test is considered complete.

SA-326 Effective Control for Oxidation of Soaps

A whitish powder called SA-326 is proving itself an effective means of controlling oxidation in soap. As a result soapmakers are producing products in which rancidity, discoloration and other faults caused by runaway oxidation are minimized.

SA-326 is especially valuable to the soap and sanitary industry because of its economy. It is employed only in very small quantities and can be easily included in formulations for either soda or potash soaps.

TSPP Used in Acid Sulphite or Ground Pulp Process Helps to Control Pitch Troubles

Another market for detergent manufacturers is opening up in the field of pulp wood production. In addition to the usual sale of detergents for in-plant scrubbing and cleaning, there is now an opportunity for selling detergents with a strong percentage of TSPP, for pitch control to plants using acid sulphite or ground wood process.

In the ground wood process the logs are debarked, cut into billets and fed into grinding machines. The pulp produced is screened and stored in stock chests for later use in newsprint and fibreboard. No chemical treatment is used and the entire process is mechanical.

During processing, however, pitch tends to precipitate, clog equipment and pile up on the sides of the stock chest. This slows operations, causes stoppages and increases production costs.

Pitch also is a troublemaker in the acid sulphite process. Here the wood is debarked or cut into chips, then cooked in a steam digester and calcium or magnesium added. After cooking, the pulp is blown against a target and broken up into fine particles. Then it is washed and goes to a beater and is hydrated.

In this process, too, pitch starts to drop out whenever the pulp is stationary.

In both processes, testing indicates that pitch troubles can be controlled by TSPP. Such control is extremely valuable to paper producers. With the help of TSPP they reduce down-time, lower operating costs, increase production.

Santomerse: Reg. U. S. Pat. Off.

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High quality tallow-coconut soap compounded with special soda silicate to give product excellent for general sanitary, dishwashing and laundering purposes. Contains 74% pure soap.

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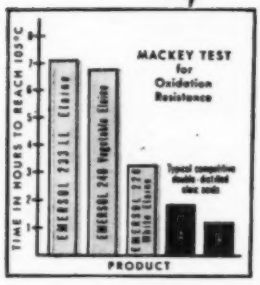
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Tetrasodium Pyrophosphate
Anhydrous (TSPP) (Pyro) $Na_4P_2O_7$

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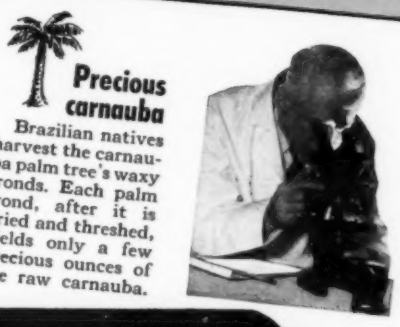

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PERFORMANCE RECORD PART OF *BIG* SALES STORY

GLOSS (Unbuffed)	E	REMOVAL (Detergent scrubbing)	C
GLOSS (After buffing)	E	ANTI-SLIP	E
MAR RESISTANCE	E	EASE OF APPLICATION	E
WATER RESISTANCE	E	HEALING	E

E-Excellent C-Complete

B★SAFE

Hydraoxated Carnauba Floor Dressing

No silicas or abrasives added . . . the slip is hydraoxated out!

THE selling is easier when you feature, under your own private label, this self-lustre, hydraoxated carnauba floor dressing.

Think of the sales impact you command when you can say, "My floor dressing is extra safe . . . because the slip has been hydraoxated out of carnauba. In every kind of weather you enjoy beautiful, safe floors . . . even under wet shoes."

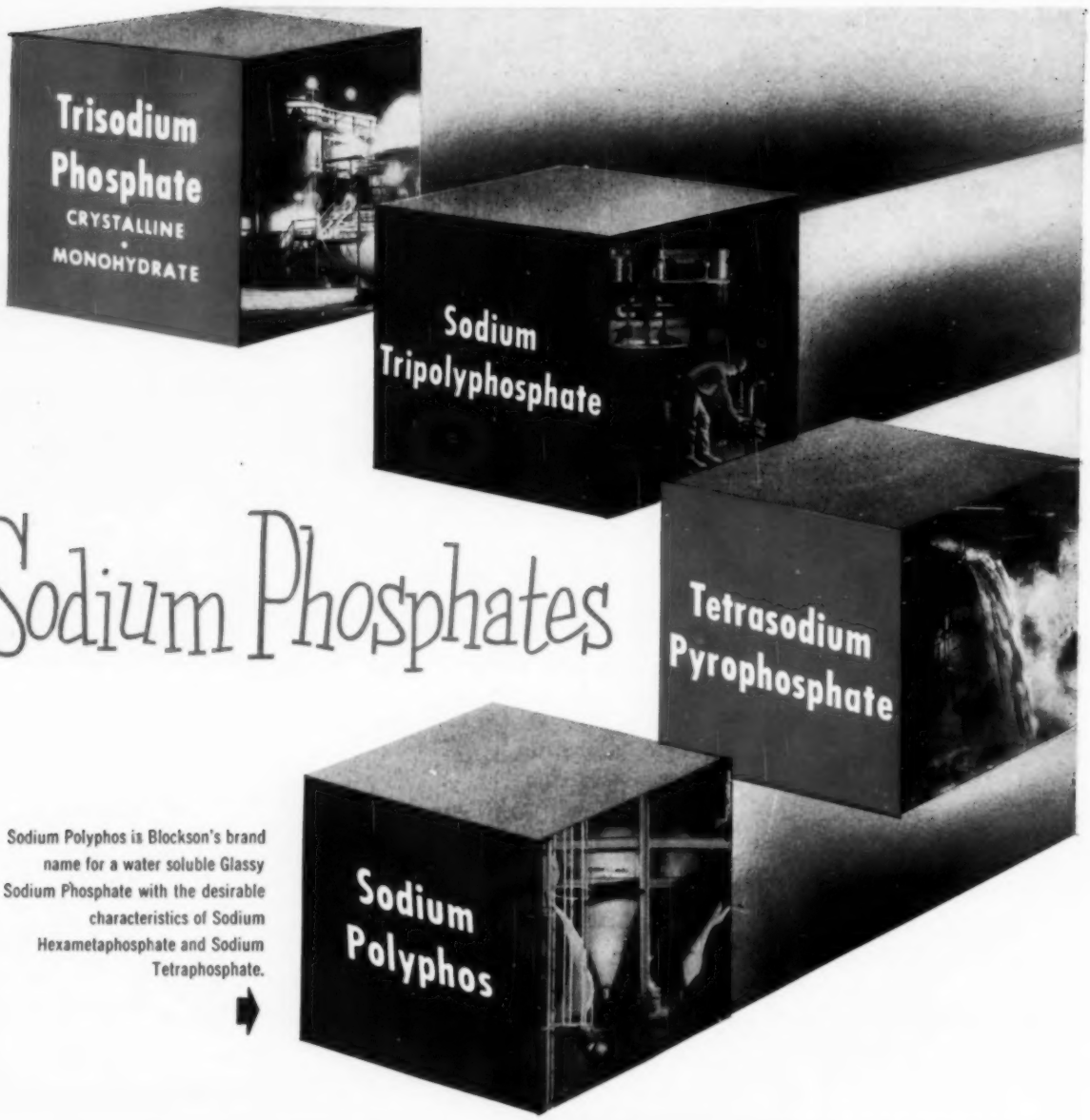
That is enough to gain a customer trial. But there is more, much, much more in our sales program to help you quickly attain enduring sales volume.

Write, wire or phone today. Your territory may still be open for distribution.

Listed anti-slip floor treatment material by Underwriters' Laboratories, Inc.

Chemical Service of Baltimore

HOWARD & WEST STREETS ★ BALTIMORE 30, MARYLAND



Sodium Phosphates

Sodium Polyphos is Blockson's brand name for a water soluble Glassy Sodium Phosphate with the desirable characteristics of Sodium Hexametaphosphate and Sodium Tetraphosphate.

BLOCKSON

BLOCKSON IS ALSO A MAJOR PRODUCER OF...	SODIUM ACID PYROPHOSPHATE
SODIUM SILICOFLUORIDE	CHLORINATED TRISODIUM PHOSPHATE
SODIUM FLUORIDE	DISODIUM PHOSPHATE Anhydrous • Crystalline
HYGRADE FERTILIZER	MONOSODIUM PHOSPHATE Anhydrous • Monohydrate

BLOCKSON CHEMICAL COMPANY • JOLIET, ILLINOIS

After Closing . . .

Ask Specialties Decontrol

Decontrol of prices for chemical specialties was urged in a resolution passed unanimously by the board of governors of the Chemical Specialties Manufacturers Assn. at a meeting at the General Oglethorpe Hotel, Savannah, Ga., Oct. 7. A copy of the resolution will be forwarded to the Office of Price Stabilization in Washington, D. C. The request for decontrol of chemical specialties' prices is based on the fact that prices of most products are well below ceilings and that greater price stabilization would result should price control be removed. In addition it was pointed out that household chemical specialties prices have no important bearing on the cost of living.

It was also announced at the meeting that prizes would be awarded for the outstanding aerosol package in six categories of products. Prizes will be awarded at the C. S. M. A.'s 39th annual meeting to be held at the Hotel New Yorker, New York, Dec. 7-9. Judges will be selected from the merchandising and packaging fields.

Dr. Al Weed Married

Dr. Alfred Weed, vice-president of John Powell & Co., New York, was married on October 2 to Mrs. Frances Whittaker Palmer at Austin, Texas. Mrs. Weed is the daughter of Mrs. Joseph Barnard Whittaker of that city.

Horsey Givaudan V.P.

Givaudan-Delawanna Inc., New York, has just announced the appointment of R. E. Horsey as vice-president in charge of sales for Givaudan and its affiliate, Sindar Corp., New York. Mr. Horsey joined the firm in 1943 as manager of the industrial products division. When, in 1948, the sales functions of this division were absorbed by Sindar Corp., a newly formed associate company, Mr. Horsey became sales manager. His new appointment

ROBERT E. HORSEY

consolidates the sales management of Givaudan and Sindar.

Borax Names Parker

James M. Gerstley, president and general manager of the Pacific Coast Borax Co., New York, named David V. Parker, director of sales and advertising, package department, succeeding W. M. Oleen, who retired October 1.

Mr. Parker has been assistant director of sales and advertising for five of his ten years with the company and acting director of sales and advertising for the last eight months.

He has been living in the east for the last three and one-half years and now will headquarter at the home office of the Pacific Coast Borax Co. in Los Angeles.

DAVID PARKER

New "All" Package Size

Macy's department store, New York, recently conducted an extensive direct mail advertising campaign to residents of the metropolitan New York area featuring a new 25 pound package of "All" laundry detergent for use in automatic washing machines. The price of $4.95 is listed as an introductory offer, and the package regularly sells for $5.95, according to Macy's. "All" is made by Detergents, Inc., Columbus, O., negotiations for the sale of which to Monsanto Chemical Co., St. Louis, were reported recently. The new package features a big new top flap large enough to allow users to insert a cup to get the required amount of the detergent.

Control Officials Meet

Association of Economic Poisons Control Officials held its sixth annual convention at the Shoreham Hotel, Washington, October 4. Papers read in the morning included the following: Progress in the Development of Insecticides, by H. L. Haller, assistant chief, Bureau of Entomology and Plant Quarantine; Labeling Principles and Problems, by M. F. Crass, Jr., secretary, Manufacturing Chemists Association; Toxicity of Newer Pesticides, by A. J. Lehman, chief of division of pharmacy, F.D.A. The afternoon program consisted of a panel discussion of everyday procedures and problems in the enforcement of pesticide laws; committee reports, and the election of officers.

Wyandotte Strike

Nearly 3,000 employees went on strike recently against Wyandotte Chemicals Co., Wyandotte, Mich. The strike was called by Local 12270 of District 50 of United Mine Workers Union. Work assignments were in dispute, wages were not involved.

Acquires Isco Wax Unit

Acquisition of the wax department and two others of Innis, Speiden & Co., New York, by Morningstar,

EDWARD O'GRADY

Nicol, Inc., New York, was announced last month. Morningstar, Nicol has arranged for the transfer of the wax department to Frank B. Ross Co., Jersey City, N. J., but for the time being will continue to process the waxes formerly made by Innis, Speiden until such time as Frank B. Ross Co. can absorb the manufacturing operations in its own plant.

Also acquired from Innis, Speiden by Morningstar, Nicol are the natural gums and absorption base departments. Other Innis, Speiden departments were not included in the transaction, which included the purchase of the Innis, Speiden factory at 480 Henderson St., Jersey City. The plant gives the new owners a modern concrete building of 25,000 square feet equipped with up-to-date machinery for processing their products.

Edward O'Grady, formerly manager of the departments acquired by Morningstar, Nicol, has joined that firm in the same capacity. He is a native of New York and after attending New York University, joined the Air Corps of the U. S. Army, serving in the European and Far Eastern theatres of operation with the rank of captain. After leaving the Air Corps he joined Innis, Speiden and took over management of the departments.

James E. Wickstead of the wax department of Innis, Speiden has joined Ross in an executive capacity.

Hold Chemical Sales Clinic

The First Chemical Sales Clinic, sponsored by Salesmen's Association of the American Chemical Industry, will be held October 28, at the Hotel Commodore, New York, it was announced recently. The all day meeting is open to members of the association, to chemical salesmen and sales managers, and chemistry students interested in entering the sales end of industry.

Ralph L. Ericson, vice-president, Sumner Chemical Co., Zeelan, Mich., is in charge of the program which includes the following subjects: selling heavy chemicals; selling fine chemicals; introducing new chemicals; service in selling chemicals; the function of advertising; the building of a sales executive; the salesman's place in the chemical industry; a look toward the future.

Cost of participation in the sales clinic is $18 to SAACI members, $20 to non-members, and $18 to students, if paid in advance, one dollar more if paid at the door.

Oil Chemists Hear Embree

Dr. Norris D. Embree, research director, Distillation Products, Inc., Rochester, N. Y., was the speaker at the season's first meeting of Northeast Oil Chemists' Society, held October 7 at Building Trades Employers' Association, New York. His talk was concerned with industrial and edible oil products produced by commercial molecular distillation.

Haring Leaves Powell

Dr. Robert C. Haring resigned Oct. 1 from John Powell & Co., New York, after having been with the firm for nearly six years. He joined the Powell company in a research capacity, later becoming manager of the firm's Brooklyn plant. He was in charge of activities at Powell's research center at Port Jefferson, N. Y. at the time of leaving the company. Before going with Powell, Dr. Haring was with the National Aniline Division of Allied Chemical & Dye Corp., New York. His future plans have not been announced.

E. B. Baker to Lever

Appointment of E. B. Baker as brand advertising manager for "Rinso" and "Spry" was announced

E. B. BAKER

recently by Lever Division, Lever Brothers Co., New York. Mr. Baker's previous associations include Personal Products Co., Young and Rubicam, Inc., New York and Detroit, and Gray & Rogers, Philadelphia. He is a graduate of the University of Pennsylvania, and served in the U. S. Navy from 1940 to 1945.

New Hyman Fungicide

Julius Hyman & Co., Division, Shell Chemical Corp., Denver, recently announced that its soil fungicide, widely tested under the code name CBP-55, will be in commercial production during the next four months at its Denver plant. Pilot plant stocks are adequate for fall supplies.

New Penick V.P.'s

Election of Ralph Olson, Giles St. Clair, and Carlos Lopez as vice-presidents was announced recently by S. B. Penick & Co., New York.

Mr. Olson has been with Penick for seventeen years and for the past five years has been in charge of the firm's Chicago branch as manager. He is a past president of Chicago Drug and Chemical Association. Mr. St. Clair is manager of the bulk pharmaceutical department, and Mr. Lopez is in charge of the foreign purchases department. Both have been associated with Penick for the past thirteen years.

C.S.M.A. Dec. Program Details

A SYMPOSIUM on fogging, with a discussion of the various types of apparatus used in the operation, and ceremonies marking the 20th anniversary of the adoption of the use of the Peet-Grady method of testing insecticides are among the highlights of the program for the 39th annual meeting of the Chemical Specialties Manufacturers Association, to be held Dec. 7-8-9 at the Hotel New Yorker, New York, it was announced recently by H. W. Hamilton, secretary.

Other phases of the program include an interim report on the relationships between laboratory test data and field test results on water emulsion waxes, presented by John B. Snider of the General Services Administration, Federal Supply Service, Washington, D. C.

In addition the program for the Soaps, Detergents and Sanitizers Division of C.S.M.A. will hear reports on detergent marketing by J. V. Miller of Atlas Powder Co., Wilmington, Del.; stain removal from plastic dinnerware by Dr. W. Wilson of Economics Laboratory, Inc., St. Paul; industrial bottle washing by Dr. Vladimir Dvorkovitz of Diversey Corp., Chicago; hard surface cleaning by John Dienna of Rohm & Haas Co., Philadelphia, and artificial soils by Jay C. Harris of Monsanto Chemical Company's central research laboratory, Dayton, O. The division will also hear a symposium discussion of alkaline builders in soap and detergent formulations.

The Waxes and Floor Finishes Division program lists a paper on the history of petroleum waxes and the chemistry of oxidized microcrystalline waxes by Bruce Clary of Bareco Oil Co., Wax Div., Tulsa, Okla., and another by John Conway, assistant manager of fine chemicals of Carbide & Carbon Co., New York. Spencer E. Hughes of McLellan Stores Co., New York, will speak on shipping problems. Other speakers scheduled to address the meeting are Dr. Alvin R. Jacobson of Columbia University's School of Public Health and Edward F. Williams, Chief, Chemical Testing Branch, General Testing Laboratories, Philadelphia Quartermaster Depot, U. S. Army.

S. S. Block of the University of Florida will discuss "Fundamentals of Mildew Prevention" during a meeting of the Disinfectant and Sanitizers Division, which will also be addressed by S. D. Boyk of Ottawa Chemical Co., Toledo; R. E. Day of Armour & Co., Chicago and Claude J. DiAngelo of Airkem Corp., New York.

C.S.M.A. meetings for the next few years which have now been scheduled include the 39th midyear meeting at the Drake Hotel, Chicago, May 17-19, 1953; the 40th annual meeting at the Mayflower Hotel in Washington, Dec. 6, 7 and 8, 1953; the 40th mid-year meeting at the Netherland Plaza Hotel, Cincinnati, May 23-24 and 25, 1954; the 41st annual meeting at the Hotel New Yorker, New York, Dec. 5-7, 1954.

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Market-Forge Brochure

A brochure on its mop wringers and mop buckets, including the new "Polly-Dolly" bucket carrier, was issued recently by Market Forge Co., Everett, Mass. The illustrated eight-page folder describes the mopping equipment made by the company and also includes a price list. Copies are available to sanitary supply jobbers and distributors by writing the company at 25 Garvey St., Everett 49, Mass.

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Dallas Vaporizer Law

The city of Dallas recently issued regulations covering the use of thermal generators in food establishments. The Dallas ordinance, No. 5479, requires that persons selling or operating thermal generators in food establishments must write to the Director of Public Health for approval of the devices. Such approval is to be based on the health officers' inspection of the unit, the type of insecticide to be used and the location of the unit in the food processing or handling plant. In addition, the unit must conform to regulations covering thermal generators issued last spring by the Health Office of the State of Texas. The Texas regulations are based on the recommendations of the Interdepartmental Committee on Pest Control.

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New Soap Ceiling Rule

OPS recently announced establishment of a new pricing formula by which some 500,000 distributors of soaps, cleansers, and synthetic detergents can compute their own ceiling prices, wholesale and retail, without resorting to OPS when a change in package or a new product is introduced. The distributors' computation is based on the percentage mark up previously established for the most nearly comparable product. The new ruling was laid down in amendment 1 to ceiling price regulation 10, revision 1, effective September 27.

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Brownell Joins Seagram

John O. Brownell, formerly for many years general sales manager for Lever Brothers Co., New York, has been elected vice-president of the Julius Kessler Division of Seagram-Distillers Corp., it was announced recently.

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Oil Chemists to Meet

The 26th annual fall meeting of the American Oil Chemists' Society will be held at the Netherland Plaza Hotel, Cincinnati, October 20-22, according to a recent announcement by R. C. Stillman, program chairman. The technical program includes a paper on the effects of non-rinsing in home laundering with new-type detergents, by F. O. J. Russell and William W. Niven, Jr., Midwest Research Institute, Kansas City, Mo. For Tuesday afternoon, October 21, trips are scheduled to the factory of Emery Industries, Cincinnati, and to the new Miami Valley laboratories of Procter and Gamble Co., at Venice, O.

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Soap Firm in HIP

Employees of S & S Soap Co., New York, recently enrolled with the Health Insurance Plan of Greater New York, it was announced by Dr. George Baehr, president and medical director of HIP.

Extends Time for Comments

The U.S. Department of Agriculture has extended the time for filing comments on proposed changes in regulations under the Federal Insecticide, Fungicide, and Rodenticide Act through October 15, 1952, it was announced recently. Final date for filing comments on the proposal as announced on August 13 was Sept. 15.

Changes would (1) establish a method for renewals of economic poison registrations under the Act, and (2) modify provisions relating to permits for economic poisons for experimental work.

Comments should be sent to the Chief of the Insecticide Division, Livestock Branch, Production and Marketing Administration, U.S. Department of Agriculture, Washington 25, D. C.

Van Ameringen Back in U.S.

A. L. van Ameringen, president of van Ameringen-Haebler, Inc., New York perfuming material manufacturers and importers, returned from Europe, Sept. 30, on the *United States*. He had been abroad since May, having stayed several weeks longer than had been planned owing to an illness. Mr. van Ameringen is reported to be in improved health, but it will be a few more weeks until he returns to his office.

Stoller in New Post

Givaudan-Delawanna, Inc., New York, recently announced appointment of Leonard Stoller as advertising manager. Mr. Stoller joined Givaudan in 1947. He was assistant to the purchasing agent prior to his new appointment.

New Jasgo Aerosols

Three new aerosol products have recently been added to the line of Jasgo Chemical Co., Brooklyn. Two of the aerosols are insecticides, the other a deodorant product. "Wiff Wonder Bomb" J-112 contains a combination of pyrethrum and DDT. It is recommended for use in places where there is no danger of contaminating food. A companion product, "Wonder Bomb J-118", designed for use in food handling establishments is formulated with pyrethrins, piperonyl butoxide and methoxychlor. It comes as a five-pound refillable unit. The other new Jasgo aerosol product is a room deodorant that contains as the deodorizing ingredient metazene.

Ninol Salt-Free Sulfonates

Ninol Laboratories, Chicago, recently announced production of sulfonated detergents by a new sulfonating process involving use of liquefied sulfur trioxide as a sulfonating agent in place of oleum. Ninol claims to be the first detergent manufacturer in the United States to use this process which is said to result in sulfonates with salt contamination under 0.1 percent, compared with a 15 percent salt content usual with previous methods. This means better solubility in either water or oil, and greater stability of formulations.

Already in production are "Ninex 21," a foam-stabilized liquid detergent, and "Toximul," an anionic emulsifier. Contemplated is a whole line of special products. A new plant is currently being built in Chicago, with a projected capacity of approximately ten million pounds.

James J. O'Shea Dies

James J. O'Shea, vice-president and sales manager of Alsop Engineering Corp., Milldale, Conn., died recently after a brief illness. Mr. O'Shea joined Alsop in 1934 and worked in the development of new types of chemical and industrial agitators. In his last position he was in complete charge of the mixer, agitator, and tank departments in both production and sales.

Shaving Aids Not Taxable

A preparation to be used on the face before using an electric razor was held not subject to the 20 percent tax on toilet preparations by the Deputy Commissioner of Internal Revenue in response to a recent inquiry by a manufacturer. This ruling is based on the fact that the product performs the same function as a lather or brushless shaving cream. Products of this kind are not taxable provided they are not used as an anti-perspirant or in other fashion as a cosmetic.

Perfumers Hear Barail

Dr. Louis C. Barail, consulting biochemist and toxicologist, spoke at the first regular monthly dinner meeting of the American Society of Perfumers, which was held at the Advertising Club, New York, September 17. He discussed odor measurements in relation to cosmetics, and described the problems to be solved in order to obtain accurate measurements of the intensity of odors, and how the osmometer he designed overcomes these obstacles. Chlorophyllins and other deodorants were evaluated.

New Aerosol Valve Unit

A new type valve dispensing unit for aerosol products, with the valve and spray head furnished separately, is now in regular production by Pressure-Pack, Inc., Detroit, it was announced late last month. The spray head is interchangeable with all cans using the threaded valve unit, permitting reductions in the retail sale price of the aerosol product. The patented "Varispray" nozzle comes in four styles and may be used for any type product packaged in aerosol form.

Nozzles are available for foam products; cosmetics, insecticides and pharmaceuticals; paints, plastics and similar surfacing materials, (adjustable for horizontal or vertical pattern), and for marking liquids and paints there is a nozzle which gives a small, round spray.

The spray head can be removed, taken apart and cleaned by the consumer for reuse on other aerosol cans of the same or different types of products. The valve unit is both soldered and clinched to the can cover for safety and may be filled through the valve if necessary.

J. H. R. Stephenson Resigns

J. H. R. Stephenson resigned Oct. 2 as sales manager of Givaudan-Delawanna, Inc., New York. He had held the post of eastern sales manager previously, and before joining Givaudan-Delawanna, Mr. Stephenson was with Aromatics Products, Inc., New York, and Colgate-Palmolive-Peet Co., Jersey City, N. J. His future plans will be announced shortly.

also available in clear glass

She was sold when she saw it. The package whispered to her, coaxed, "Buy Me!" And she did. It happens every day with many famous brands who pack to attract in Maryland Blue. Blue is a double-duty package. It makes a strong, practical container and it acts as a powerful advertising, merchandising and selling tool. It puts your product's best foot forward in the passing parade of busy shoppers. Get complete details. Write for samples today.

MARYLAND GLASS CORPORATION • BALTIMORE 30, MARYLAND

stops the eye . . . starts the sale

pack to attract in maryland blue

Lavamenthe

a minty freshness for a lavender composition

description

An Aromatic Chemical of ketonic nature. A colorless to light yellow liquid with a minty top-note against a woody background.

SPECIFIC GRAVITY at 25/25° C. 0.974–0.976

SOLUBILITY: Soluble in alcohol and all essential oils.

Lavamenthe —an aromatic that promises to become a basic material in many types of perfume compositions. Its minty top-note supported by its woody background makes it excellent for sustaining and intensifying top-notes in lavender and mint formulations. Wherever it is used, LAVAMENTHE imparts an exciting freshness, yet does not create the "coolness" of most mint-like products.

In lavender and mint compositions LAVAMENTHE may be used effectively in concentrations as low as 2%. To extend the lavender odor in Oil of Lavendin and to make it more soluble, concentrations up to 20% may be used. LAVAMENTHE effectively extends the spiciness of spice bouquets when used in concentrations of 2–10%.

For quality colognes and perfumes LAVAMENTHE EXTRA is especially recommended.

Write to Dow on your company letterhead for a complimentary sample of LAVAMENTHE.

DOW

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Aromatics Division • 629 Grove Street • Jersey City 2, N. J.

Dow Chemical of Canada, Limited, Toronto, Canada

Exclusive Sales Representative for SYNAROME *in the United States, Canada and Cuba*

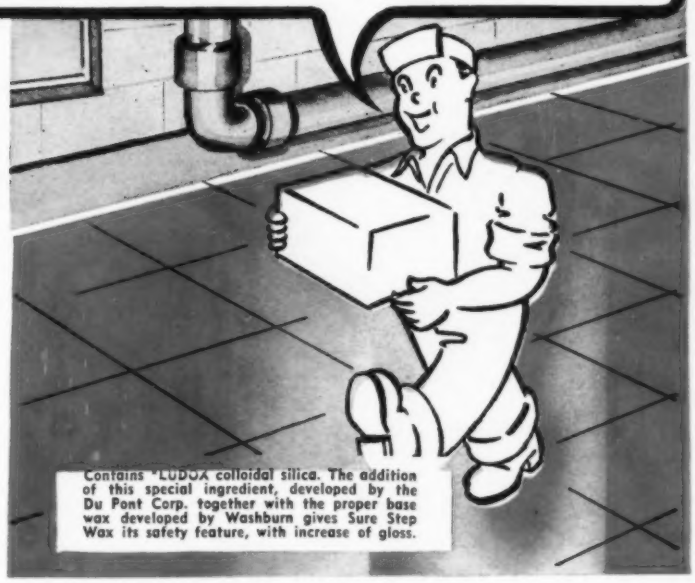
FLOOR SAFETY ASSURED WITH

"SURE STEP WAX"

. . . BECAUSE IT CONTAINS* LUDOX

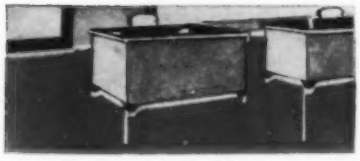
Rich – glossy looking yet **SAFE!**

Sure Step Wax is the tried and proven safety floor wax. It has been the pioneer . . . the leader. Thousands of hospitals, schools, industrial plants, office buildings and many other Sure Step Wax users, who demand floor safety are using Sure Step Wax throughout their floor maintenance program.



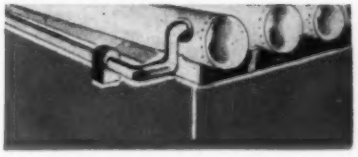
Contains *LUDOX colloidal silica. The addition of this special ingredient, developed by the Du Pont Corp. together with the proper base wax developed by Washburn gives Sure Step Wax its safety feature, with increase of gloss.

Rugged Beauty For Home—Stores—Office—Plants, Etc.



Sure Step Wax adds new beauty and color to your office floors.

Sure Step Wax gives new life and sparkling lustre to institutional floors.



Sure Step Wax has the rugged toughness and safety required in industrial plants.

Sure Step Wax—Solves An Old Problem

Sure Step Wax outmodes all ordinary anti-slip floor waxes, with their dull, gummy and tacky surfaces. Sure Step Wax has been discovered to definitely do a better job because it combines safety plus long-lasting, wearing qualities. Requires only 20 minutes to dry to a mirror-like finish. Sure Step Wax will last longer, costs less to clean and maintain.

WRITE FOR SAMPLES, specifications and prices.

In 15, 30, 55 gal. drums; 5 gal. cans.

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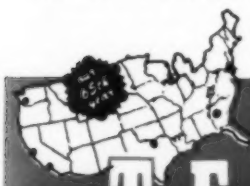

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Fragrance Makes the Heart Grow Fonder...

PEOPLE RESPOND to fragrance... whether it's on a pretty girl or on a product. To find the one *right* fragrance for your product dial our nearest office. You and your perfuming problems will be answered by a perfect combination of skill, resources and experience.

NAUGAROMES—For various industrial and commercial uses.

SOAPOLS—For bar, paste and liquid soaps.

SHAMPAROMES—For liquid, cream and paste shampoos.

MODERN BASES—For fine perfumes, colognes, toilet waters, toilet preparations, etc.

CREAMODORS—For all types of creams and lotions.

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DIVISION OF UNITED STATES RUBBER COMPANY

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Toronto—Montreal

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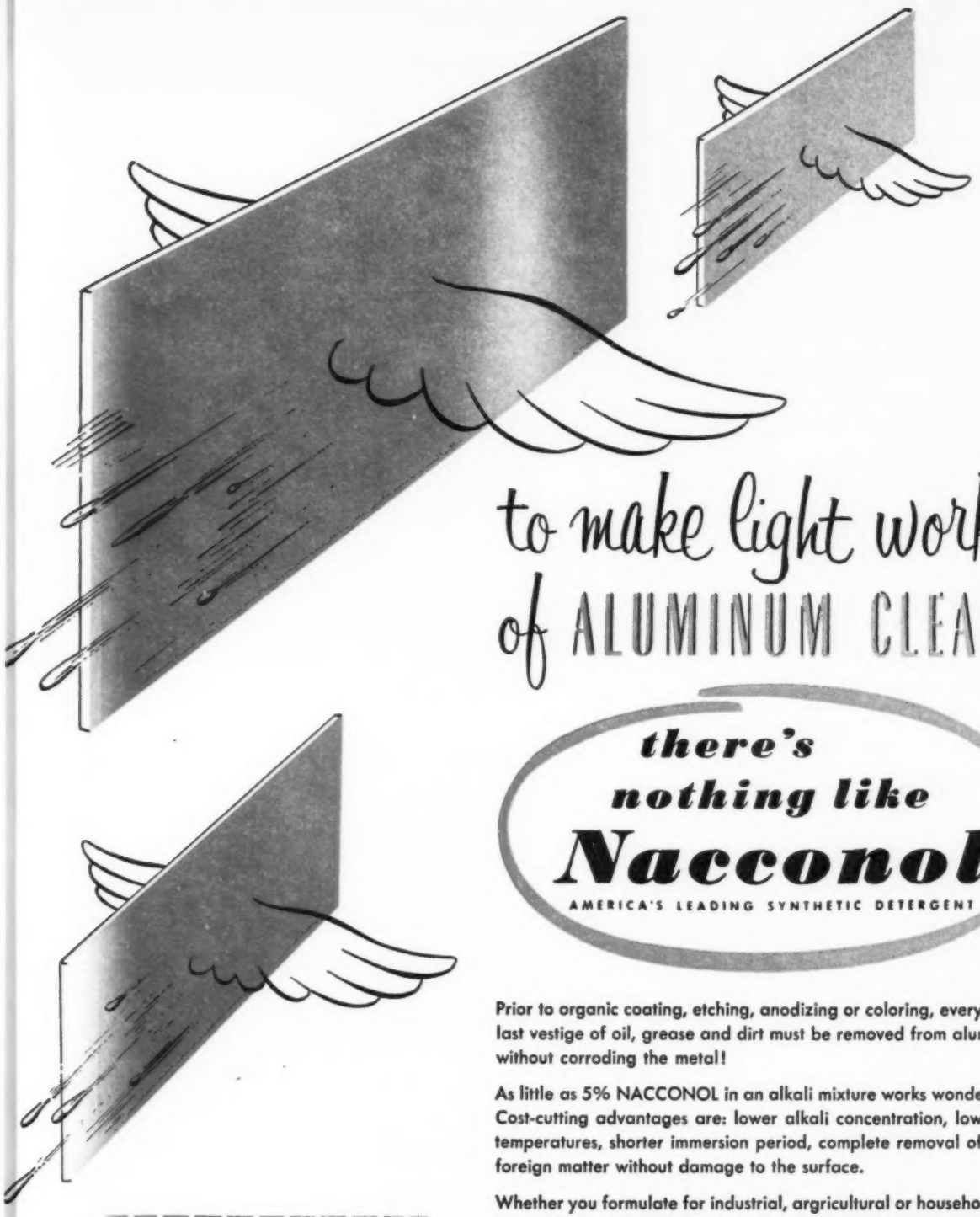
MANUFACTURERS OF AROMATIC CHEMICALS—IMPORTERS OF ESSENTIAL OILS



to make light work of ALUMINUM CLEANING

there's nothing like Nacconol*

AMERICA'S LEADING SYNTHETIC DETERGENT

Prior to organic coating, etching, anodizing or coloring, every last vestige of oil, grease and dirt must be removed from aluminum . . . without corroding the metal!

As little as 5% NACCONOL in an alkali mixture works wonders. Cost-cutting advantages are: lower alkali concentration, lower bath temperatures, shorter immersion period, complete removal of foreign matter without damage to the surface.

Whether you formulate for industrial, argricultural or household use, your mixtures will work better and sell faster with NACCONOL. You can be sure of uniform organic-detergent content lot after lot . . . maximum money-value whether the market is long or short. Available in Flake, Granular, Liquid, Light Bead and Dense Bead form. For formula suggestions, samples and prices get in touch with our nearest office.

Send for
Technical Bulletin on
ALUMINUM DEGREASING

NACCONOL
Technical Report No. 9914-6
gives interesting test results with various NACCONOL-alkali mixtures. It may help you to increase sales of your mixtures to aluminum-fabricating shops. Write for a copy —without cost or obligation.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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*Reg. U.S. Pat. Off.

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Providence 3, R.I., 15 Westminster St.	DExter 1-3008	Columbus, Ga., Columbus Interstate Bldg.	Columbus 3-1829
Philadelphia 6, Pa., 200-204 S. Front St.	LOmbard 3-6382	Greensboro, N.C., Jefferson Standard Bldg.	GReenshoro 2-2518
San Francisco 5, Cal., 517 Howard St.	SUtter 1-7507	Chattanooga 2, Tenn., James Building	CHattanooga 6-6347
Portland 9, Ore., 730 West Burnside St.	Beacon 1853	Atlanta 2, Ga., 254 E. Paces Ferry Rd.	EXchange 3594
Chicago 54, Ill., The Merchandise Mart	SUperior 7-3387	New Orleans 12, La., 714 Carondelet Bldg.	Raymond 7228
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THE AMAZING NEW SODIUM GLASSY PHOSPHATE

FOR-

- SOAPS AND DETERGENTS
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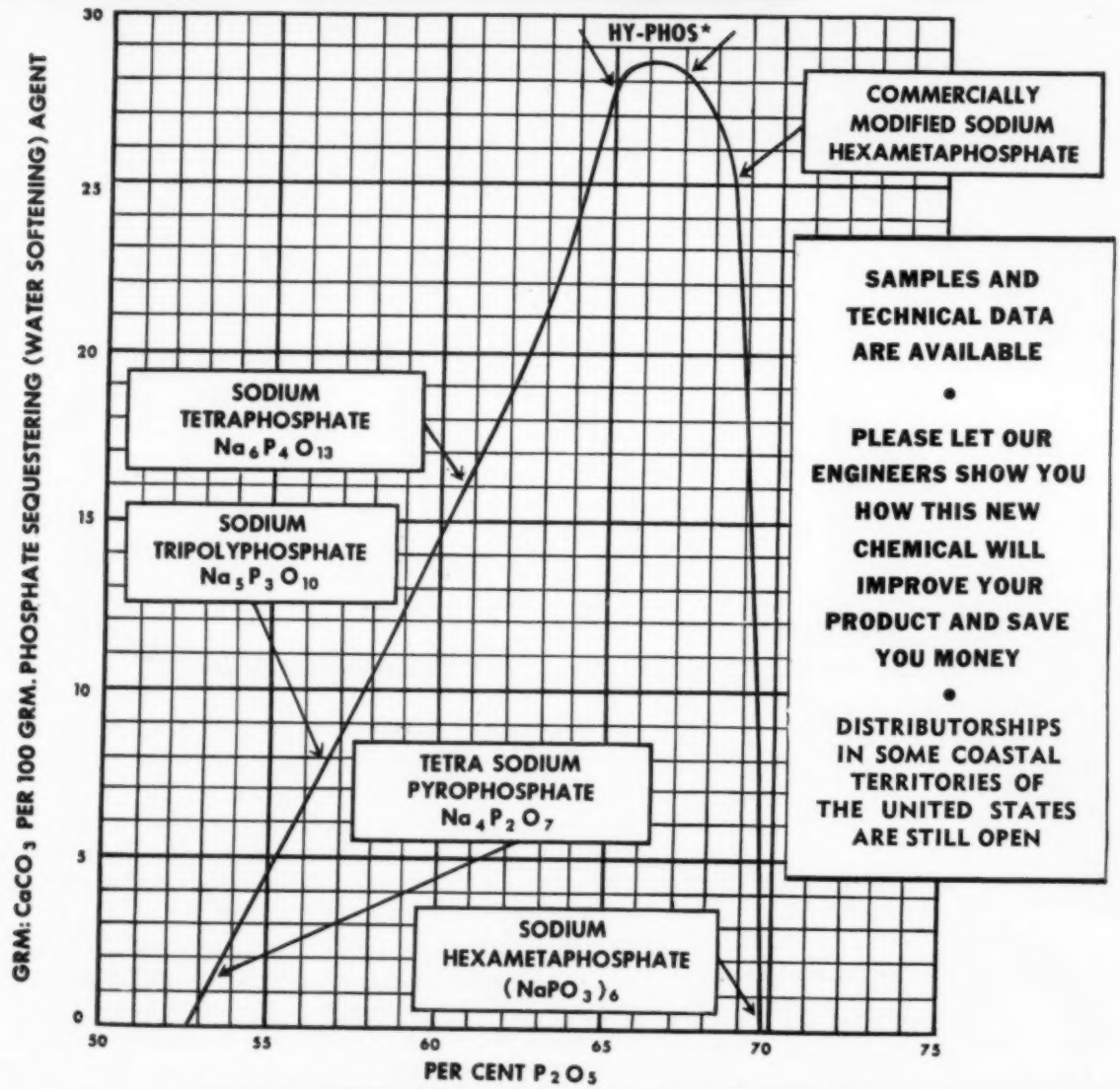
- DISH WASHING
- TEXTILE PROCESSING
- WATER TREATMENTS
- CLEANING COMPOUNDS
- BOILER WATER COMPOUNDS
- METAL CLEANERS
- MAKING SOAP POWDERS
- ETC.



SAMPLES AND TECHNICAL DATA ARE AVAILABLE

•

PLEASE LET OUR ENGINEERS SHOW YOU HOW THIS NEW CHEMICAL WILL IMPROVE YOUR PRODUCT AND SAVE YOU MONEY

•

DISTRIBUTORSHIPS IN SOME COASTAL TERRITORIES OF THE UNITED STATES ARE STILL OPEN

CALCIUM SEQUESTERING (WATER SOFTENING) PROPERTIES OF COMPLEX PHOSPHATES USING SOAP AS AN INDICATOR

U. S. PATENT NO. 2,574,047 GRANTED NOV. 6, 1951

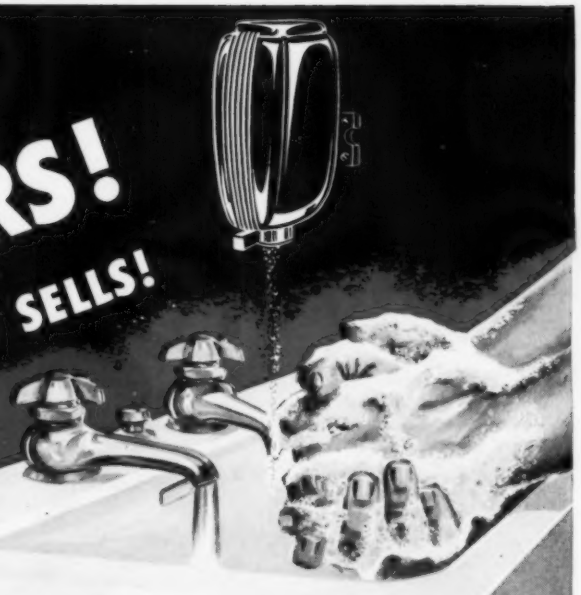
AMERICAN DYEWOOD COMPANY,

RIVERSIDE MILLS, CHESTER, PA.

* Trade-Mark

LOOK HOW IT LATHERS!

NO WONDER IT SELLS!



PEPCO 415

(LANOLATED)

- Smooth powder, pleasantly scented
- No rough abrasive, but it sure cuts grease and grime
- Contains lanolin, so it leaves hands feeling soft
- Completely dissolves . . . won't clog drains
- Free flowing . . . won't pack in dispensers

THE ONE POWDERED HAND SOAP FOR BOTH SHOP AND OFFICE USE

We don't believe there's ever been a powdered hand soap that lathers like PEPCO-415. And it's a good heavy lather that wins the grease-and-grime test on dirty shop hands. Our chemists worked months to give this powder real grease-cutting power without the use of irritating abrasives.

Many firms first bought PEPCO-415 for shop use. Soon the office force demanded it. Sales have been doubling up like that for dealers everywhere.

Show customers how PEPCO-415 works up mounds of lather *right now* in hot or cold water . . . how well it cleans . . . how soft it leaves the hands. You make ready sales . . . nice profit.

Offer PEPCO-415 to get more of the powdered hand soap business.

PPC SINCE 1916

Peck's PRODUCTS COMPANY

610 E. CLARENCE, ST. LOUIS 15, MO.

MANUFACTURERS OF SOAPS, DETERGENTS, SANITARY PRODUCTS

MAIL COUPON NOW for generous FREE SAMPLE

PECK'S PRODUCTS COMPANY,
610 E. CLARENCE, ST. LOUIS 15, MO.

SEND FREE SAMPLE OF PEPCO-415 AND YOUR PROFIT PICTURE FOR DEALERS

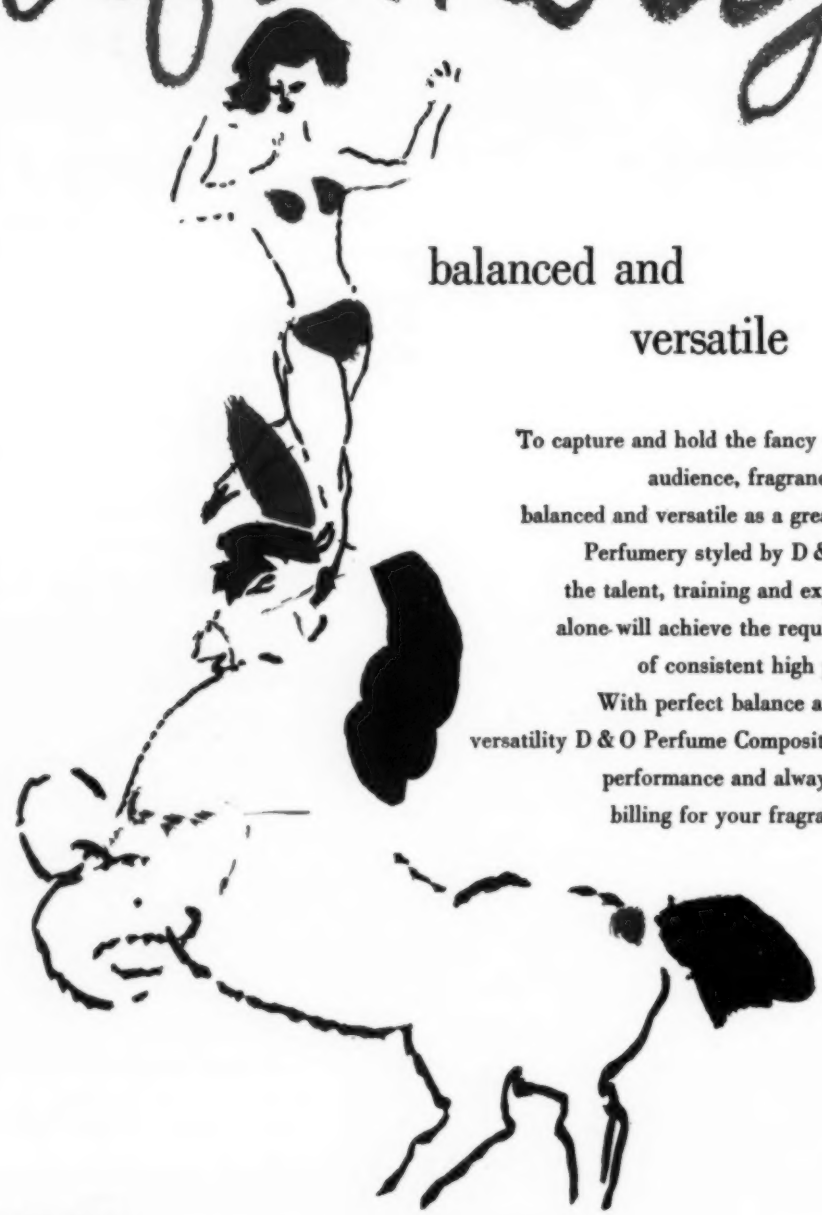
NAME_____

FIRM_____

STREET_____

CITY & ZONE_____ STATE_____

perfumery



balanced and versatile

To capture and hold the fancy of its myriad audience, fragrance must be as balanced and versatile as a great performer. Perfumery styled by D & O combines the talent, training and experience that alone will achieve the required standard of consistent high performance. With perfect balance and maximum versatility D & O Perfume Compositions give top performance and always secure star billing for your fragrance product.

D.O

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DODGE & OLCOTT, INC.

180 Varick Street • New York 14, N. Y.

SALES OFFICES IN PRINCIPAL CITIES

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • VANILLA • FLAVOR BASES

A trifle gives terrific results . . .

RENEX® has no equal

as a foundation for better detergents

A small amount of RENEX gives a terrific boost to the detergency of cleaning compounds—home laundering compounds for example.

The low sudsing and low temperature features of RENEX are especially advantageous for automatic-type washing machines where sudsing detergents impede mechanical action. RENEX compounds produce superior whiteness as compared with soap and many other detergents when used in hard water. Here's a typical formula meant only to serve as a guide and to show one of the uses of RENEX:

RENEX	15.0%
Sodium carboxymethyl-cellulose (low visc.)	1.5%
Water	13.5%
Tetrasodium pyrophosphate	30.0%
Sodium metasilicate	10.0%
Soda ash	30.0%

Nothing equals RENEX for increasing the efficiency of soaps, alkalies, or sulfonates. As little as 5% RENEX has increased cleaning efficiency as much as 30%! RENEX is the best foundation for better detergents for home laundries, dishwashers, floor and wall cleaners—for the hundred and one household, industrial, and military cleaning jobs.

RENEX is low in cost and made from plentiful raw materials. It is also available in powdered form—RENEX 25. Samples and helpful literature available for your study. Send *now* for RENEX booklet of formulas for typical detergent preparations.

Industrial Chemicals Department

ATLAS POWDER COMPANY

WILMINGTON 99, DELAWARE • OFFICES IN PRINCIPAL CITIES

ATLAS POWDER COMPANY, CANADA, LTD., BRANTFORD, CANADA

NEW VARIATIONS ON AN OLD THEME*

Recording new and old variations on the uses of its products

is a fundamental part of Niagara's service to industry.

NIALK® Caustic Soda

High purity that never falters—even on a tonnage basis—makes this product one of the most popular chemicals for use in detergent and toilet soaps of all types, as well as for shaving soaps and shampoos.

Due to forward-looking research and precise production methods, NIALK products rank with the best in the field of electrochemicals.

NIAGARA ALKALI COMPANY

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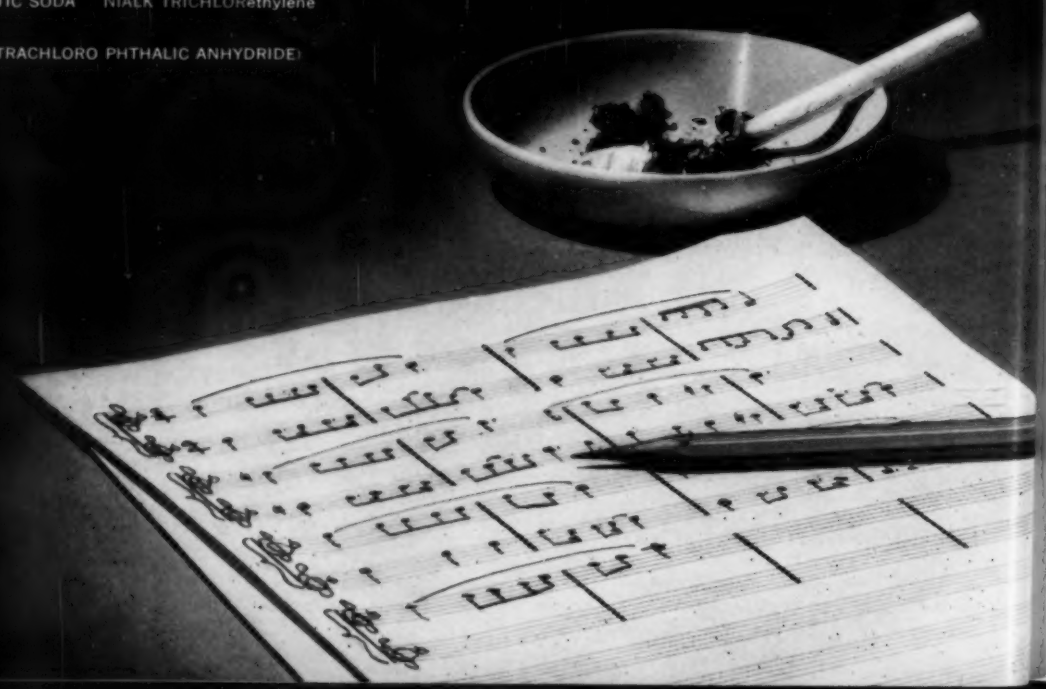
* NIALK LIQUID CHLORINE NIALK CAUSTIC POTASH

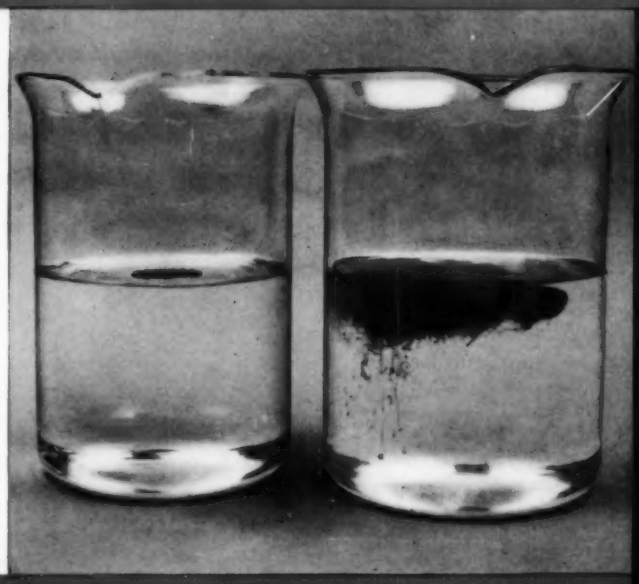
NIALK CARBONATE OF POTASH NIALK PARADICHLOROBENZENE

NIALK CAUSTIC SODA NIALK TRICHLORethylene

NIAGATHAL® (TETRACHLORO PHTHALIC ANHYDRIDE)

ULTRAWET Detergents Mean Quality

Synthetic detergents with the highest performance returns

THE ULTRAWETS



Graphite floating on water — Graphite dispersed in ULTRAWET

Atlantic makes a wide range of alkyl aryl sulfonates we've called ULTRAWETS. We can't always tell you that our ULTRAWETS are the lowest priced. We can tell you no one can touch the ULTRAWETS for *quality*.

With surface active detergents, your saving comes – not from the initial price – but from the kind of results you get during use. The quality of the ULTRAWETS brings you a new high in value. Whether you buy them in liquid, flake or bead form . . . whether you want cleaning, wetting, emulsifying, dispersing or penetrating properties . . . you can be sure the ULTRAWETS and Atlantic know-how will give you the *best* performance.

If you'd like to know more about the ULTRAWETS . . . what they are . . . what they can do . . . what package or amount they can be ordered in . . . and the answers to any other questions, write The Atlantic Refining Company, Chemical Products Section, Dept. D-18, 260 So. Broad St., Philadelphia 1, Pa.

In the East
THE ATLANTIC REFINING COMPANY
Philadelphia • Providence • Charlotte
Chicago

On the West Coast
L. H. BUTCHER COMPANY
San Francisco • Los Angeles • Seattle
Salt Lake City • Portland

In Canada
NAUGATUCK CHEMICALS
Division of Dominion Rubber Co., Ltd.
Elmira • Montreal • Toronto • Windsor
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ATLANTIC
PETROLEUM
CHEMICALS

Please send complete details on ULTRAWETS.

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Position _____

Company _____

Address _____

WITH WAXES CONTAINING ANTI-SLIP "LUDOX"

Anti-slip Du Pont "Ludox" gives floor wax a unique snubbing action. When your foot hits the floor, tiny, hard particles of "Ludox" are pushed into larger, softer wax globules. This causes the foot's forward-moving energy to be absorbed quickly and safely—helps keep the foot from slipping.

The added safety of waxes containing "Ludox" can mean greatly increased sales for you. Another big selling feature is their extra hardness. And along with these outstanding advantages, all the basic qualities of gloss, water-resistance, freeze-resistance and leveling are maintained in properly formulated waxes.

Today, there is a variety of anti-slip waxes made with "Ludox." A continually increasing number of safety and sanitation engineers are specifying them for business, industry, and institutions.

Check up on the growing demand for anti-slip waxes with "Ludox." Ask your wax supplier about them. Or if you want to manufacture a wax made with "Ludox," write for technical information. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., 4147-C Du Pont Bldg., Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

150th Anniversary

Better Things for Better Living
...through Chemistry

LUDOX
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COLLOIDAL SILICA

"...softens my beard quicker."

"...leaves my hair silkier."

You Assure Consumer Acceptance with Drew Fatty Acids

"...makes dishwashing easier."

"...a more effective antiseptic."

Many of today's best-selling items are based on Drew Coconut Fatty Acids. These superior fatty acids make important contributions to product quality that mean increased saleability and *repeat* sales.

Drew is the country's largest producer of Coconut Fatty Acids. We know from experience what qualities the consumer demands in the products you make. And we know how those qualities can be assured.

Drew's great production not only assures you of a dependable supply, but guarantees you the *right* fatty acid for *your* requirements. Moreover, Drew Fatty Acids are yours at competitive prices!

Remember! Drew produces over 20 different fatty acids. And, to help you make the most of Drew superior quality, we offer you the technical assistance of the foremost company in the field. Write *today* for our valuable free booklet on fatty acids.

DREW PRODUCTS

TECHNICAL PRODUCTS DIVISION

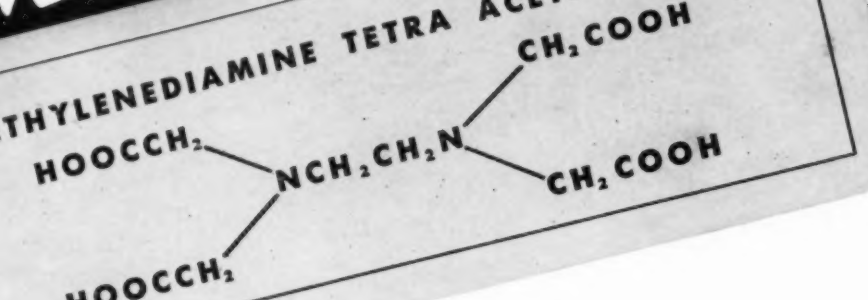
E. F. DREW & CO., Inc.

15 EAST 26TH STREET, NEW YORK 10, N. Y.

BOSTON • PHILADELPHIA • CHICAGO

SEQUESTRENE

ETHYLENEDIAMINE TETRA ACETIC ACID



SEQUESTRENE is a non-colloidal organic "builder" and chelating agent which will give your soaps, detergents and sanitary chemicals more "mileage", more quality, more for your money.

SEQUESTRENE is a stabilizer for polyphosphates, silicates, peroxides . . . a synergist for quaternary ammonium and phenolic germicides . . . a foam stabilizer and detergency "builder" for soaps, anionic and nonionic detergents . . . a rancidity, oxidation and odor retardant in soaps, sulfonated oils, alkyl aryl sulfonates . . . decontaminant for radioactive surfaces . . . solubilizing agent in caustic soda bottle washing compounds, floor cleaners, milk stone solvents, rust removers, paint stripper, laundry alkali, heavy duty metal cleaners . . . clarifier for liquid soaps, shampoos . . . and in formulation of detergent-sanitizers, toilet soap, optical bleaches, liquid detergents.

SEQUESTRENE is available as the pure acid (for conversion to amine or potassium salts) and as the di-, tri- and tetra sodium salts.

Write for New Technical Bulletin Today

Extensive bibliography of other literature available.

ALROSE CHEMICAL COMPANY

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A smart closure, an easy-to-read label on Duraglas stock-mold bottle #A-6856 make your product the one they see . . . the one they buy.

FRESHEN UP your package to step up sales!

You, too, can have package individuality . . . gain brand recognition at the point of sale and still keep within commercial limits on costs.

There are hundreds of different sizes, styles and shapes of stock-mold Duraglas bottles from which you can choose one that is exactly right for your product. Skilled packaging designers at the Duraglas Center are ready to help you create an unusual label and closure combination to distinguish your product.

Call us today if you want to give your line an economical sales-package that will fit today's pattern of self-service selling. And remember, no matter what the market conditions may be, it doesn't pay to let your package get out of the *habit* of selling.

Duraglas packages are protectors of quality

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Gives Stable Small-Bubble Foam

Lots and Lots of it...

THICKENS AQUEOUS SOLUTIONS

Gives you desirable viscosity without use of additives...

EMULSIFIES MOST COMMON OILS

Wets and disperses, too...

CLEANS TEXTILES AND HARD SURFACES

A really superior detergent...

RINSES AND DRAINS READILY

Particularly on dishes and glassware...

ONYXOL 336

The New Non-Ionic Detergent

Here Are a Few Potential Uses...

- Industrial Cleaners
- Shampoos of All Kinds
- Bubble Bath Salts
- Buffing and Polishing Compounds
- Cosmetics
- Wettable Sulfur
- Polishes
- Pigments
- Fire Fighting Solutions... Foam Type
- Ore Flotation Solutions
- Liquid Detergents... Household

onyx

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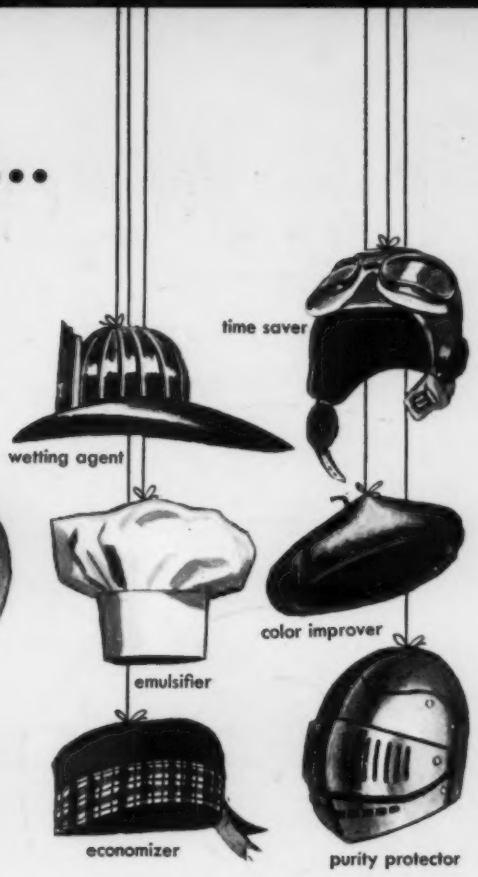
If it's an unusual role...



...perhaps fatty acid can play it!

Today, industrial chemists are calling on fatty acids for more and more kinds of performance in an ever-broadening list of products, as indicated by the chart at right.

Work done by Archer-Daniels-Midland Company in recent years has broadened the applications of fatty acids quite remarkably. RO-10 Soya Acids allow a wider choice of raw materials . . . simplify processing . . . assure a higher quality, more uniform product. RO-10 Acids are made from recovered soybean oil . . . by *distillation* . . . and are remarkably free from the metallic soaps, hydroxy acids, aldehydes and other impurities often found in split acids.

You can order RO-10 or any other ADM vegetable fatty acids in combination with oils of any kind, in truckload, carload or tank car lots. That means *extra* savings!

Mail the coupon for samples and technical bulletins.

Take the Scientific Shortcut with **Archer fatty acids**

You can always follow the market with the broad line of ADM VEGETABLE FATTY ACIDS

FATTY ACID TYPE AND GRADE	PROTECTIVE COATINGS	SYNTHETIC RESINS	INKS	PUTTY AND CAULKING COMPOUNDS	METALLIC SOAPS	LIQUID SOAPS	WAXES AND POLISHES	INSECTICIDES AND DISINFECTANTS	LUBRICATING GREASES	COSMETICS	PHARMACEUTICAL
COCONUT Double-Distilled		X				X		X		X	
LINSEED											
Water White	X	X	X								
Regular	X	X	X	X	X	X		X			
SM-500	X	X	X	X	X	X		X			
SM-600	X	X	X	X	X	X		X			
Essential Unsaturated Free Fatty Acids											X
SOYA											
Water White	X	X	X								
Regular	X	X	X		X	X		X			
RO-4	X	X	X		X	X		X			
RO-10	X	X	X	X	X	X	X	X	X		
RO-11S	X	X	X		X			X			
MIXED VEGETABLE RO-8	X	X		X	X	X	X	X	X		
CORN-SOYA Double-Distilled				X		X	X	X	X		
CORN Double-Distilled				X		X	X	X	X		
COTTONSEED Double-Distilled		X			X		X	X	X		
CHINAWOOD	X	X	X								

ARCHER-DANIELS-MIDLAND COMPANY 4

600 Roanoke Building, Minneapolis 2, Minn.

● Please send your Technical Bulletins on ADM Fatty Acids, covering applications in:

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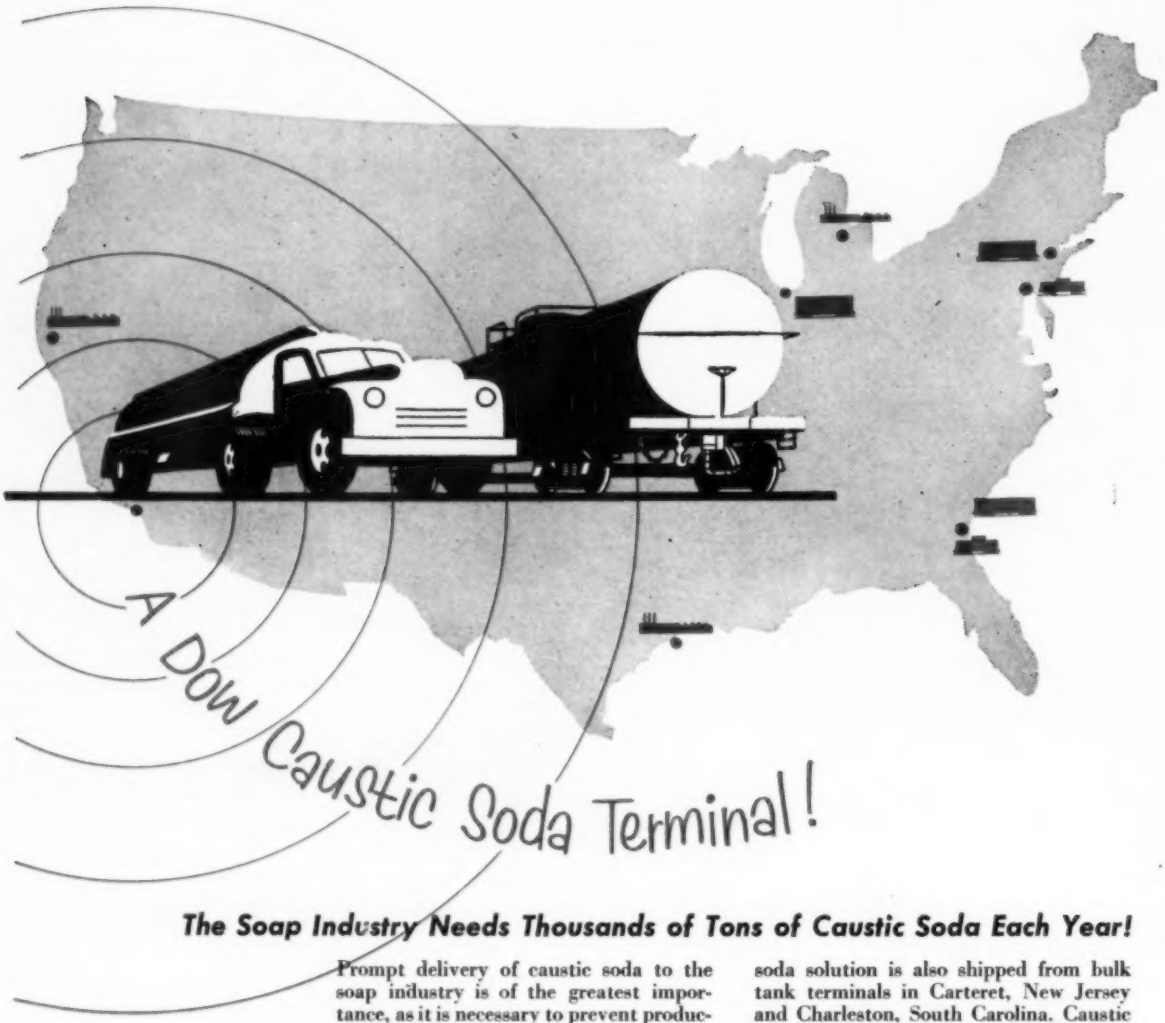
☐ Also send samples.

how close are you to Los Angeles, California?



The Soap Industry Needs Thousands of Tons of Caustic Soda Each Year!

Prompt delivery of caustic soda to the soap industry is of the greatest importance, as it is necessary to prevent production lags. For this reason Dow maintains an outstanding network of distribution facilities. In addition to Dow's caustic soda solution terminal in Los Angeles, California—Dow operates caustic soda plants in Midland, Michigan; Freeport, Texas and Pittsburg, California. Caustic soda solution is also shipped from bulk tank terminals in Carteret, New Jersey and Charleston, South Carolina. Caustic soda solid, flake and ground flake are shipped from terminals in Chicago, Illinois; Port Newark, New Jersey and Charleston, South Carolina. All of these distribution points play an important part in providing the soap industry with the superior service it requires.

wherever you are... *you're close to*

DOW CAUSTIC SODA

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Atlanta • Cleveland • Detroit
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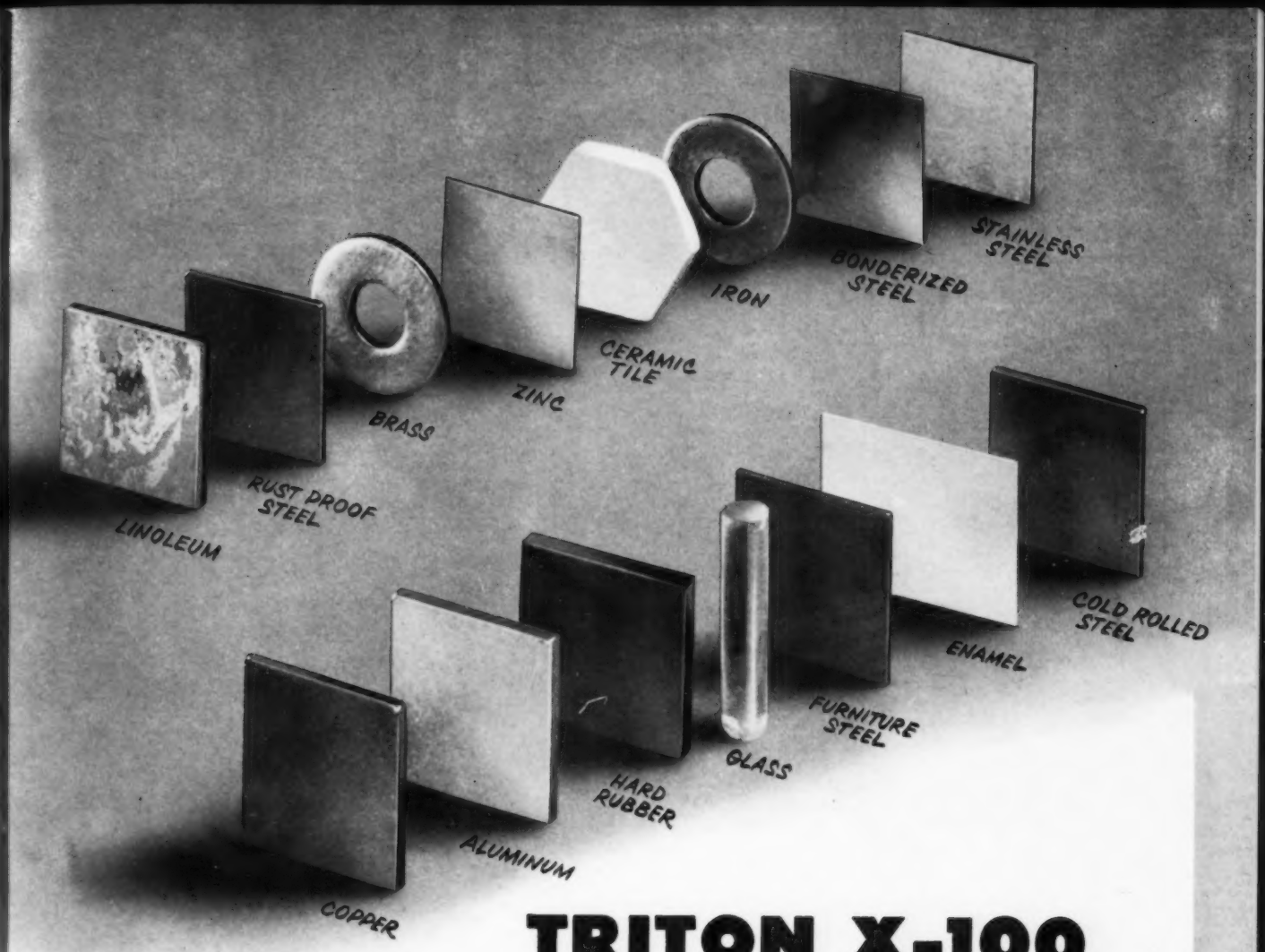
DOW

CHEMICALS

INDISPENSABLE TO INDUSTRY AND AGRICULTURE



TRITON X-100 Cleans them all

Laboratory and field tests prove the superiority of TRITON X-100 as a cleaner on many different hard surfaces.

Is your product used in any of the following fields?

Metal cleaning prior to the plating or the application of protective coatings.

Janitorial work on tough-to-clean ceramic tile, linoleum or enamelled surfaces.

Restaurant washing of greasy china, glassware, aluminum and steel.

If so, you will improve its performance by including TRITON X-100 in your formula.

TRITON X-100 is effective both as a liquid detergent and also when built on powdered alkalies. Its outstanding soil removal and soil suspension properties will greatly help your product in solving your customers' cleaning problems.

Rohm & Haas technical data and formulation suggestions with TRITON X-100 are yours for the asking.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

*TRITON *is a trade-mark, Reg. U. S. Pat Off. and in principal foreign countries*

PQ silicates of soda

protect sensitive surfaces

How do your detergents behave on machine parts, utensils, dishes, silverware? When your formulas include PQ Silicates you can be sure they are controlled against corrosive action.

Soluble silica content of PQ Silicates keeps synthetic detergents, phosphates and other alkalies from attacking aluminum, tin, copper, alloys, enamels, glazes, etc. Silicates are doubly acceptable since they are also efficient dirt removers.

Use PQ Silicates in your detergents so that they do protect sensitive surfaces. We shall be glad to discuss the choice of the right alkaline silicate for your operations.

PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Bldg., Phila. 6, Pa.

☐ Please send free bulletins describing PQ Silicates for building synthetic detergents and soaps. ☐ Have a representative call.

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COMPANY .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

Announcing

Two New NONIONIC DETERGENTS

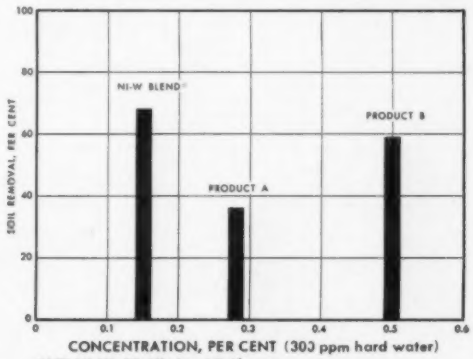
by the world's largest producer of synthetic detergent raw materials

After extensive laboratory and field tests, Oronite proudly introduces two outstanding nonionic detergents—Dispersant NI-W (water soluble) and Dispersant NI-O (oil soluble). Oronite offers both products in uniform quality, at stable prices and in assured supply.

Dispersant NI-W

(FORMERLY NI 8598)

Oronite's new Dispersant NI-W is a clear, light straw-colored liquid—95% active. It may be compounded with phosphate or other builders and dried to give free-flowing granular products. It is also suitable for the making of liquid detergents. You will find NI-W very adaptable for the manufacture of economical, high-quality formulations. It is completely compatible with soaps and anionic detergents. As shown by the chart, unusual cotton detergency may be obtained. This new Oronite product is particularly suitable for manufacturing detergents for commercial or self-service laundries and automatic home washers. Technical bulletin describing Dispersant NI-W is available on request.



*19% NI-W, 1% Alkylaryl Sulfonate, 50% Sodium Tripolyphosphate, 30% Sodium Sulfate

Cotton detergency in a tumbling type automatic washing machine of a formulation based on Dispersant NI-W compared to products A and B (commercial materials designed for this use). Note that each product was tested at the recommended use concentration and that the NI-W compound shows high soil removal performance at low concentration.

Dispersant NI-O

(FORMERLY NI 8593)

This new clear, straw-colored liquid detergent is an excellent emulsifier for water-in-oil emulsions. Dispersant NI-O was specially designed for use as a dry cleaning detergent in systems employing all types of solvents. It has the ability to suspend large quantities of finely divided solids in solvent media. It exhibits superior detergency and is not readily absorbed by filter aids. Technical bulletin is available on request.

TESTS IN COMMERCIAL DRY CLEANING PLANT

	WOOLENS	
	DISPERSANT NI-O	Detergent A
Soil Removal Index*	99	91
Passup Rate**	70	55
	RAYONS	
	DISPERSANT NI-O	Detergent A
Soil Removal Index*	96	90
Passup Rate**	60	45

*Soil Removal Index determined by reflectance measurements of test swatches.

**Passup Rate is the percentage of garments not requiring spotting after cleaning.

A partial list of Oronite products:

Detergent Alkane, Detergent Slurry, Detergent D-40, Detergent D-60, Wetting Agents, Lubricating Oil Additives, Cresylic Acids, Gas Odorants, Sodium Sulfonates, Purified Sulfonate, Naphthenic Acids, Phthalic Anhydride, Ortho-Xylene, Para-Xylene, Xylol, Aliphatic Acid, Hydroformer Catalyst, Polybutenes.

ORONITE CHEMICAL COMPANY
THE NAME TO WATCH IN CHEMICALS

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIF. — STANDARD OIL BLDG., LOS ANGELES 15, CALIF.
30 ROCKELELLER PLAZA, NEW YORK 20, N.Y. — 600 S. MICHIGAN AVENUE, CHICAGO 5, ILL.
MERCANTILE SECURITIES BLDG., DALLAS 1, TEXAS

2565

FOR BETTER SOAPS AND DETERGENTS

AS LITTLE AS

1%

CMC-CT (BASED ON TOTAL FORMULATION)

GIVES LAUNDRY

100%

IN WHITENESS RETENTION

Get the most out of your synthetic detergents and built high- and low-titer soaps by adding a little CMC-CT. White goods will come through repeated launderings with their full whiteness, and dyed color goods with their full brightness, because of CMC-CT's proved ability to keep soil, once removed from the cloth, from being redeposited before final rinsing. As little as 1% CMC-CT, based on total formulation, means cleaner, whiter laundry—even after repeated washings.

HERCULES®

CMC-CT

HERCULES POWDER COMPANY Cellulose Products Department, 961 Market St., Wilmington 99, Del.

CMS2-19

. . . in brief

as the editor sees it . .

CLEAN UP . . . At least one sure road to easy riches remains open. If we can believe what we read in the general magazines, all you do is market a synthetic detergent product. "Synthetic wash suds look like a good way to clean up on a market," says one news magazine, not failing to miss the cute "clean up" touch. Everybody's going into synthetics and everybody's going to make a pot full of money. Soap is a dead duck! So, just put out a new synthetic for the household washer trade, sit back and wait for the shower of gold.

Thus it goes of late *ad nauseam*. Much as we have carried the torch for synthetics during the past ten years, we feel that they are being overglamorized today to the point of assininity. Merit they have aplenty and assurance of a great future. They need no phoney glamorization. Facts and not news writers' dreams should dictate the information which is given to the public about them. The picture should be complete, not just the honey and roses portion.

To date, no great fortunes have been made in finished packaged synthetics, as far as we can determine. Even the larger, experienced marketers have not "cleaned up" as the news writer so coyly puts it. A few of them have been burned. As newcomers in the market sit back and wait for their shower of gold, they should be warned to watch out for a brickbat or two.

•

SOAP COSTS . . . Going further into this soap versus syndet discussion which probably will go on and on for a long time to come, we recently ran into a soaper who expressed the view that the pendulum could swing in the opposite direction over the next year or two. In short, he holds that soap will win back some of the market which it has lost to synthetics. His main argument is founded on a continuation of low cost tallow and grease.

Cheap raw material gives soap a competitive edge which the syndets cannot continue to meet indefinitely in spite of their technical advantages. As noted, compounders of finished synthetics on the whole are not making money and cannot make money in the face of five-cent tallow. The soaper in question expects the tallow market to continue scraping bottom for a long time with obvious effects. The advantage, he holds, will be to sell soap, not syndets.

One important point, we believe, has not been considered too closely in this contention. Over the past two years, tallow and grease have been at low ebb, drugs on the market. During that period, the synthetics have made their greatest progress both technically and marketwise. The next question is obvious. If they can take away a goodly portion of the soap market in the face of five-cent tallow, what happens if tallow ever becomes stabilized at say eight to ten cents? Next question, please!

•

AEROSOL SHAVES . . . Four of the oldest American marketers of shave cream and other shave soaps have just announced new aerosol shave creams. Although this move by four leaders in the shaving cream field is not exactly a surprise to folks in the industry, it does remind us that the last remaining citadel of the older-style products has fallen. True to American business tradition, they have followed the dictation of the old adage, "if you can't lick 'em, then jine 'em."

Inquiry in and about the retail stores of the country indicates that aerosol shave creams have been catching on fast at the expense of the bowl, stick, and tube. The minute or two which they save Mr. McGuff in completing that daily chore,

his morning shave, are indeed welcome. Their economy has been proved by actual count, thereby disproving the early contention that high cost would present a difficult market hurdle.

Actually, the old-type shave creams and soaps still command the bulk of the market as might be expected. However, the rapid and continuing rise of the aerosol products no doubt must have had a profound effect on the four stalwarts just entering the market. They probably figured it's easier to swim with the tide.

●

VAPORIZERS . . . Insecticide vaporizing devices continue to come in for restrictive attention in various states and cities. Laws and regulations requiring that all vaporizers meet the recommendations of the Interdepartmental Committee,—not more than one gram of lindane vaporized in a twenty-four hour period,—are being considered and passed. No doubt unfavorable publicity, including adverse recommendations by the American Medical Association, has inspired this activity. It behooves manufacturers and distributors who sell these devices to watch and heed these new regulations for their own protection.

While we hold no candle for faulty devices and believe that they should be put off the market, we still feel that the attention which vaporizers are receiving from public officials is disproportionate. While dozens of other far more important health and sanitation problems are ignored year after year, vaporizers are singled out for special attention. Ah, the power of publicity!

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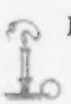


DE-CONTROL . . . A report from Washington has it that price decontrol of floor waxes, insecticides, aerosols, disinfectants, and other chemical specialties is an imminent possibility. Spreading sentiment in the industry favoring de-control has snowballed into a movement to have all controls removed at the earliest possible moment. Spearheaded by the Chemical Specialties Manufacturers Association, action is being taken to bring about de-control and a strong appeal has been made to OPS for a return to a free market.

Most chemical specialties have been selling at or below ceiling prices for some time past. Furthermore, in view of growing competition in the industry, the price trend is downward. Thus, price control has resolved itself into little more than a general nuisance to manufacturers and others in the industry, in some instances a rather expensive clerical nuisance. De-control at this time would have no appreciable effect on the nation's economy. It is hoped that OPS will act speedily in line with these facts.

●

PREMIUMS . . . Something over two billion dollars will be spent for premiums this year by marketers of soaps, foods, and other branded merchandise, an all-time record according to W. Parlin Lillard, president of the Premium Advertising Council. He further predicts that this record figure for 1952 is just the beginning and that 1953 will go even higher. Housewives and children account for ninety per cent of the traffic in box tops and quarters. The current trend is toward gaudy and sensational premiums today, this trend being accounted for by the fact that more loose money is clinking around in the pockets of truck drivers' wives, than in those of the professional and white collar workers.

If 1953 is to be another record premium year for soaps and foodstuffs, we look to see an increasing incidence of insanity among grocers and some other retailers. Since 1950, they have been driven practically to the batty-house by a deluge of coupon and premium deals. If all manufacturers will make their coupons a part of the package and require that the seeker of "something for nothing" deal direct with the manufacturer, the grocers of America will be duly grateful. If they never again see another coupon or premium in their stores, it will be too soon for most of them.

as the reader sees it . . .

Thanks from France

Editor:

I should like to proffer my most sincere thanks, in my own name, and in the name of the French Soaps and Detergents Productivity Team for the kind welcome which you extended to us when we visited New York and the courtesies shown to us throughout your industry. We deeply appreciated the privilege of actually seeing the facilities of American manufacturers and of having the opportunity of asking their staffs numerous questions, thus collecting valuable information as regards American productivity. Looking forward to the pleasure of meeting you again, and of being able to thank you once more.

L. Mayolle
Industrie des Corps Gras

* * *

With pleasure, we pass on to those American manufacturers and others who helped make the visit of the French Productivity Team to the U. S. both pleasant and valuable, the sincere thanks of L. Mayolle and his colleagues. We can add that it was a great pleasure to have had them visit us.—Ed.

Trade Practice Rules

Editor:

As you may be aware, the proceedings for the establishment of rules for (the floor wax and polish) industry have been pending for some time and involve the solution of many difficult problems including defining "wax", fixing a minimum percentage of wax for qualification for representation as being a wax product, and fixing requirements for the claim that the product is "slip resistant". After the industry conference two sets of proposed rules were released and public hearings held thereon.

This is an active industry proceeding and many informal conferences have been held by members of the Trade Practice Conference staff with interested industry representatives since the last public hearing on proposed rules. I am informed that it now appears advisable that another set of proposed rules be released for hearing and that effort is being made to have the same released and a hearing held thereon before the close of the calendar year.

James M. Mead,
Chairman,
Federal Trade Commission
Washington, D. C.

* * *

Commissioner Mead's letter, in reply to one of ours requesting copies of the proposed trade practice rules for the Floor Wax and Polish Industry as well as for comments on the status of the rules, also pointed out that the supply of sets of proposed rules is nearly exhausted. Ed.

Fleisher with SDPA

Editor:

On June 23rd, after nine years of civilian service in the Navy Department, I transferred from the position of Chief, Chemistry Branch, Bureau of Ships, to the position of Production Specialist, Engineering Services Division, Small Defense Plants Administration. Inasmuch as the transfer involved a rather complete change of technical activity, I resigned simultaneously as Chairman of the Federal Specifications Committee on Soaps and Cleaning Compounds, an extrafunctional post which I had held for almost six years.

I was recently advised that there exists considerable confusion in the industry as to my present location and status, apparently because of the fact that I had not made any effort to publicize widely my transfer to a new field of activity.

As a service to your readers, I would indeed appreciate the inclusion in your columns of an announcement of my old and new positions.

Harry Fleisher
Small Defense Plants
Administration
Washington, D. C.

* * *

We are glad to hear of Mr. Fleisher's new appointment, but are sorry to learn that he will not be in a position to aid us as he has in the past. He was particularly helpful to us in compiling the list of specifica-

(Turn to Page 193)

Inspecting fan blades prior to machine-cleaning — Oakite Products Photo

METAL CLEANERS

"KEEP IT CLEAN" remains the basic rule in all metal finishing plants. A properly prepared and scrupulously clean surface is the foundation upon which a successful and durable finish is built. Experienced workers know that the cleaning procedure and the type of cleaning materials used by them can make or break the final painting, plating or any one of a dozen metal finishing operations.

As remarked by Gray, (1) an expert in the field, those with the most experience in the finishing industry know that the importance of the cleaning operation cannot be emphasized too much. One universally recognized principle is that the production of protective and decorative coatings of high quality is dependent upon the proper and thorough pretreatment of the surface of the base metal. This rule holds for both ferrous (iron and steel) and nonferrous metals, including aluminum, magnesium, brass, bronze, copper, zinc, nickel and tin.

Cleaning, therefore, is a necessary prerequisite for the successful application of inorganic or organic finishes to any metal surface. Moreover, there is no exception to the rule that a uniformly clean surface is essential for obtaining good adhesion and appearance of electroplates, paint coatings, oxide films and other finishes. Hence, the first step in the preparation of any metal surface is the removal of dirt, oil, grease, and various materials used in processing, including drawing, polishing and buffing compounds. Corrosion products, such as rust, scale or oxides, must also be removed.

In other words, the metal surface must be chemically clean if imperfections and faults in the finish are to be avoided. Failure to follow this rule has often resulted in costly rejections and in additional finishing operations. (2)

Cleaning Test Methods

BECAUSE of the importance of surface cleanliness in the metal finishing cycle, a good deal of effort has gone into the development of methods for determining the efficacy of metal cleaning materials and methods. As noted by Harris, (3) such determinations may be made by means of direct and indirect performance tests. Among the latter are tests for pH and titration values, colloidal properties, water softening, conductivity, solvent action, surface and interfacial tension, emulsification, rinsability, and stability under conditions of usage. Direct performance tests are designed to determine the efficiency of cleaning materials to remove various types of soil from metal surfaces under controlled conditions.

Undoubtedly, one of the most familiar performance tests is the so-called "water break" method. This consists simply in dipping the metal in cold water. There will be an unbroken film of water over the entire surface if it is free of wax, oil and grease. Conversely, breaking of the water film into patches and spots is a certain sign of incomplete cleaning. This method has been used for a long time, in both the shop and laboratory, as a criterion for evaluating metal surface cleanliness.

However, as noted by Vance, (4) the water break test is not always a reliable indicator of cleanliness.

Hence various improvements have been proposed from time to time. For example, a modification developed by Spring and his colleagues (5, 6) involves the coating of metal panels with various oils by a specific dipping and drainage technique, followed by a carefully controlled cleaning and rinsing procedure. The panels are then covered with a fine spray of water, which condenses as droplets on the oil-covered areas. From the pattern of the oil film, it is possible to rate various agents according to their cleaning index.

Another refinement was offered in the method developed by Morgan and Lankler. (7) They determine the residual oil on a metal surface by photographing the fluorescence under ultraviolet light. Prior to testing, a metal panel is soiled with a naturally fluorescing mineral oil or with vegetable or animal oils containing a fluorescent dyestuff. The photographs provide a convenient and quantitative means for detecting and recording oil residues on metal surfaces both before and after cleaning.

By Milton A. Lesser

PART I

Radioactive Tracer Use

MORE recently, Tiers (8) proposed the use of a "swirl" method for evaluating metal cleaners. It is a gravimetric procedure based on the amount of a standard soil removed from a panel after it has been swirled in a solution of the cleaner being tested. Of course, a valuable research tool for the development and testing of metal cleaners is provided in radioactive isotopes. As already indicated by several investigators, (9, 10, 11) tests employing soils tagged with radioactive tracers offer definite advantages over other methods. Thus, Harris and his co-workers (12) showed that radioisotopic evaluation methods were not only more sensitive, but that they also provide rapid, quantitative measurements of minute amounts of soil. The distribution of the soil on test pieces can be determined by the radio-autographic technique.

The efficiency of a metal cleaner is determined not only by its composition but also by its method of use. As put simply in one discussion, (13) the removal of soil from a metal requires that the cleaning medium, whether alkaline, solvent or acid, be brought into contact with the soil and agitated. It is noted that there are three common methods for bringing the soil and cleaning medium together. They are: (a) soak tank, (b) washing machine, e.g. mechanical tank or spray cleaners, and (c) electrolytic action. Of course, other methods are employed in metal cleaning, including vapor degreasing, barrel tumbling, steam gun spraying and, in a new approach, ultrasonic cleaning.

As remarked by Bardin, (14) the cleaning method will be determined largely by the size and shape of the metal parts or products, the type of soil to be removed, and the end use of the product. Thus, a large proportion of modern metal cleaning is still done by the old reliable method of dipping or soaking the metal parts in a cleaning solution. Agitation is usually provided by the boiling action, by movement of the parts, through the use of steam or compressed air, or by mechanical means. This type of cleaning is used to remove fabricated compounds from metal parts prior to anodizing, barrel plating, bonderizing, heat treating, vitreous enameling, painting, and occasionally before electrocleaning and electroplating. (15)

Depending on the type of soil to be removed from the metal surface, the cleaner may be alkaline, solvent or acidic. In some cases only a single cleaner may be needed and one tank may suffice. However, where larger amounts and mixtures of soil are encountered, the cleansing operation may require a specific sequence of soaking and rinsing operations. Experts (16) in the field advise that by simple variations of sequence, a basic arrangement of tanks can be made to handle almost any cleaning problem; ranging from the washing away of a light film of oil to the removal of heavy mixtures of grease, scale and burned-on residues.

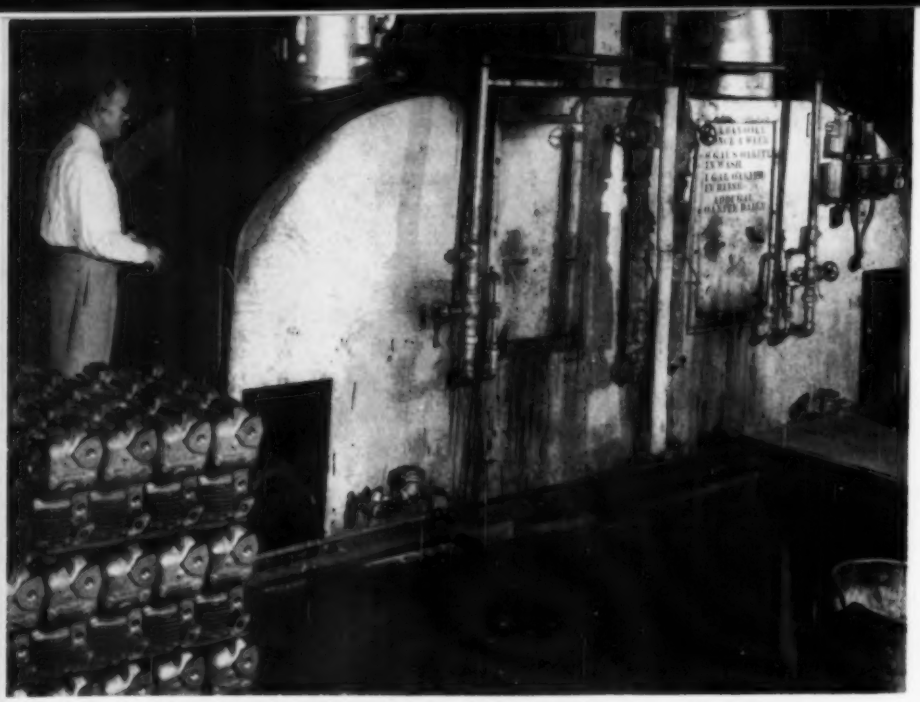
Where speed is important, mechanical tank or spray cleaners provide a rapid and efficient action. The main advantage of such equipment lies in the fact that it combines a mechanical action of the sprays with the chemical and physical effects of the cleaning agents. Through this three-way assault, the dirt is rapidly wetted, penetrated, loosened, removed from the surface and emulsified or suspended in the solution. Because of such combined action, lower concentrations of cleaner are needed in such equipment than are required in tank cleaning. (13)

These automatic or semi-automatic power washers offer an effective means of cleaning a wide variety of metal parts. Employed to remove heavy accumulations of oil, ship dirt and chips, such units are useful for preparing work for inspection, heat-treating, or assembly, and for preliminary cleaning prior to electroplating, painting or other finishing procedures.

Electrocleaning is also an effective and rapid method of removing soil from metal. In this process, the alkaline cleaning solution is the electrolyte, the work is one pole, and the tank or a number of steel plates is the other pole. (4) Because hydrogen or oxygen is liberated at the work surface, electrolytic cleaning offers excellent agitation, minimum corrosion and preservation of surface contours. The work may be made the anode or the cathode or a combination of the two may be used.

In discussing this metal cleaning method, Lux (17) observed that in cathodic or direct current electrocleaning, the part is negatively charged and hydrogen is deposited on it. With this method, there is little or no tarnishing or attack of nonferrous metals. In addition, greater agitation takes place around the parts being cleaned than is the case with anodic cleaning. However, positively charged metal ions will deposit on the work and may produce loose surface smuts from metallic impurities accidentally dissolved in the cleaning solution.

In anodic or reverse current electrocleaning, the part being treated



Machine for washing small engines to remove oil, grease and dirt before inspection and further processing

Oakite Products Photo

is positively charged and oxygen gas is formed on its surface. In general, there is little tendency for films to form on the parts being cleaned. Indeed, there is a definite tendency to "unplate" any smuts or films that may be present on the surface. At normal current densities, the oxygen generated by the anodic process shows little tendency to oxidize steel or other ferrous alloys. Non-ferrous metals, however, will oxidize or tarnish and tend to dissolve unless the proper inhibitors are present in the cleaning solution. For the same reason, non-ferrous metals are generally cleaned anodically for shorter periods and at lower current densities than are ferrous metals.

Small parts may be cleaned by tumbling them in a rotating barrel containing a cleaning solution. A specialized method of preparing large volumes of small parts, barrel cleaning is said (16) to be very effective for cleaning parts that are too small or too light for spray washing or which pack together too closely to permit good electrocleaning or soak cleaning.

Following comments on the value of tumbling as a means of preparing and cleaning small parts, Hyler (18) remarks that centrifugal washing is particularly valuable in cleaning small parts. The cleaning solution is valved into these centrifugal washing machines. More recently, ultrasonic energy has been employed in a new method for cleaning a variety of small metal parts. It is said (19) that ultrasonic energy can be used to accelerate the action of standard cleaning solvents on grease, oil, lapping and buffing compounds, or loose metal chips.

At the other extreme are parts that are too large for treatment in soak tanks, in spray equipment or by electrocleaning methods. For such parts, manual cleaning or steam gun cleaning may be called into use. Steam cleaning is finding ever-increasing utility, especially where there is heavy contamination of the metal surface. The advantages of this method and the types of detergents required in steam cleaning have been discussed in some detail in *Soap and Sanitary Chemicals*. (20)

Four Main Classes

ALTHOUGH more detailed classifications have been suggested, metal cleaning compounds may be grouped into four main categories, as follows: (a) alkaline cleaners, (b) solvents, (c) emulsion cleaners, and (d) acidic cleaners. The selection of the most suitable type of cleaner or combination of cleaners for each job will depend upon a number of considerations. As remarked by Sanders, (21) much of the enormous amount of time and labor expended in the removal of dirt and other contaminants can be cut by a knowledge of the basic factors in each surface cleaning job.

Thus, due consideration must be given to such factors as the shape and size of the product, the equipment available, and the degree of cleanliness desired; this last depending on the type of finish to be applied to the cleaned surface. Particularly important, however, is the type of metal to be treated and the amount and kind of dirt to be removed.

As remarked by McCutcheon, (22) each type of metal requires specific types of cleaners. For example, aluminum is very sensitive to alkaline cleaners and unless an inhibitor, such as a silicate, is present, the surface may be corroded and roughened by the treatment. Similar precautions must be observed with zinc and various soft metal alloys. Mabb (23) stresses that careful selection of cleaners is required for aluminum and aluminum-base alloys, tin, tin plate, soldered articles, zinc or zinc-coated metals, and zinc-base alloys. The use of cleaners with high alkalinity is limited to ferrous or other alkali-unreactive metals, like magnesium. Solvent cleaners, however, are applicable to all types of metals and are finding increasing use. (24)

Quite a variety of contaminants may be found on metal surfaces. From the viewpoint of metal cleaning, says Vance (4) this dirt may be classified as organic substances, solid particles and products of corrosion. The different kinds of dirt included in these categories will markedly affect the selection of the cleaning agent. Obviously, a cleaner suitable only for an oily surface will not be adequate for the surface covered with oil and solid dirt particles or scale. With such mixed soil, one cleaner may not be able to perform satisfactorily. For example, successful preparation of steel parts for subsequent operations may, and usually does require the use of more than one type of cleaner. Thus, while either a solvent or alkaline cleaner would effectively remove the oily component of the dirt, an acid cleaner would also be needed if the surface is to be free of oxides.

Conversely, the character of the dirt commonly encountered on metal will definitely influence the composition of the cleaner. Thus, in his discussion of the development of alkaline cleaners, Tiers (25) suggests that if the soil contains a large proportion of saponifiable material, the dirt can probably be best removed by providing a highly alkaline solution that will react with the saponifiable portions to form its own soap and readily disperse itself. If, however, the soil has little or no saponifiable material, such as a straight petroleum oil, it will be necessary for the cleaner to provide emulsifying action and lowered interfacial tensions.

Significant is Tiers' observation that only in rare instances does the formulator know exactly what kind of soil his cleaner will be required to remove. As a rule, he must base the composition of his product on a general knowledge of the various types of soil that will be encountered in a given branch of the metal industry. Hence an alkaline cleaner should possess certain basic properties, to a marked extent at least, if it is to function efficiently. These properties have been discussed by Mabb (23) who feels that an alkaline cleaner should: (a) be completely and easily soluble in water, (b) be effective at low concentrations, (c) be chemically stable to heat and aeration, (d) be capable of immediately wetting the article, (e) possess high emulsifying power, (f) have high deflocculating power, (g) not attack the base metal to the detriment of the appearance, dimensions or mechanical strength, and (h) not produce vapors irritant to the operators. In addition to these properties, the cleaner should be economical, free rinsing and, when used for electrolytic cleaners, should have good conductivity.

Alkaline Cleaners

ALKALINE cleaners are the oldest of the commercial metal cleaners and remain, by far, the most widely used. (4) According to Groves, (26) such products have the greatest range of application for producing chemically clean surfaces. Well formulated alkaline cleaners have the penetrating, wetting and emulsifying action and free rinsing qualities necessary to remove oil, grease, dirt, polishing and buffing compounds and paints from metals which are not attacked by them, such as ferrous metals, brass and copper. They are used to prepare metal surfaces for plating, lacquering, painting, blackening, enameling, rust-proofing, heat-treating and pickling; and for stripping paint, lacquer, enamel and electro-deposits from metal surfaces preparatory to refinishing. These cleaners are also used to remove lubricants after machining, cutting, grinding, stamping, drawing, and similar metal-forming operations. (27)

Alkaline solutions are used in tank, spray and electrolytic cleaning equipment. While many cleaners are specifically designed for each method, some products may be adapted for use in more than one type of cleaning procedure. For example, the same compound may be used for both soak and spray cleaning. However, as already noted, immersion cleaning requires more concentrated solutions than mechanical or spray cleaning. (28) As noted by Sizelove, (29) soak cleaners can also be used as cathodic or direct electrocleaners. He advises against their use with anodic or reverse current, even though there are a few plants which use soak cleaners for this purpose.

Although most alkaline cleaners are fairly simple compositions, quite a number of materials may enter into their formulation. The main ingredient is generally a silicate, phosphate or carbonate, or mixtures of these materials. Caustic soda is often included to give higher alkalinity and increased efficiency. (25) Various other desirable effects are obtained through the inclusion of soaps, surfactants and newer sequestering agents, including the complex polyphosphates.

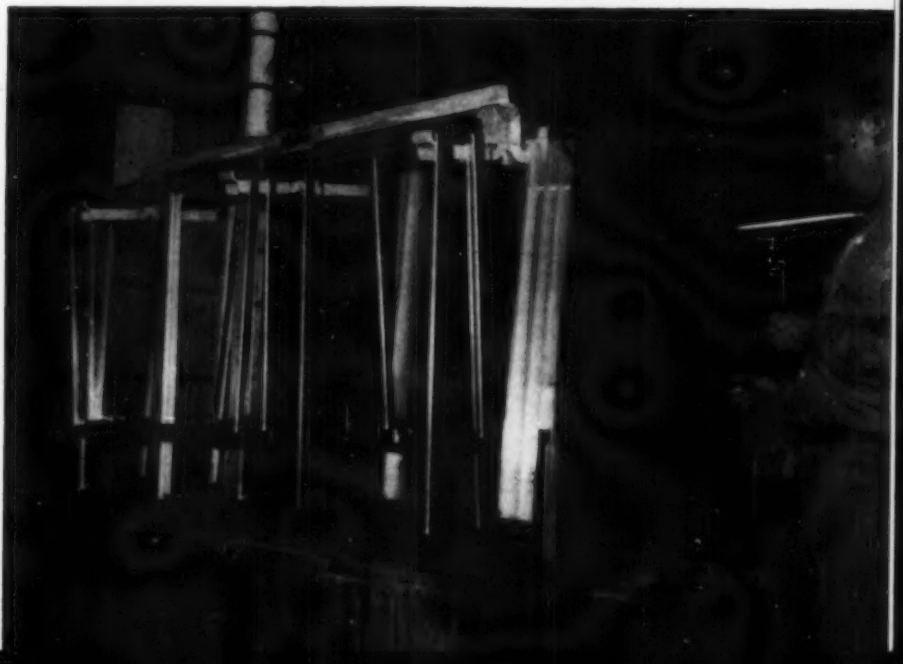
In the old days, most alkaline metal cleaners were based on caustics and the results obtained with them left much to be desired. The addition of soaps and the use of alkaline salts rather than caustics led to improved cleaning efficiency and reduced the hazards of the compounds. (24) By reducing the surface tension and contributing to good wetting, soaps increase the cleaning effect of the alkaline components. Various soaps, including sodium rosinate and several special combinations, are used in the preparation of soak-type cleaners. Fairly inexpensive and with good detergency, soaps have certain disadvantages; poor rinsing qualities being the most familiar. (30)

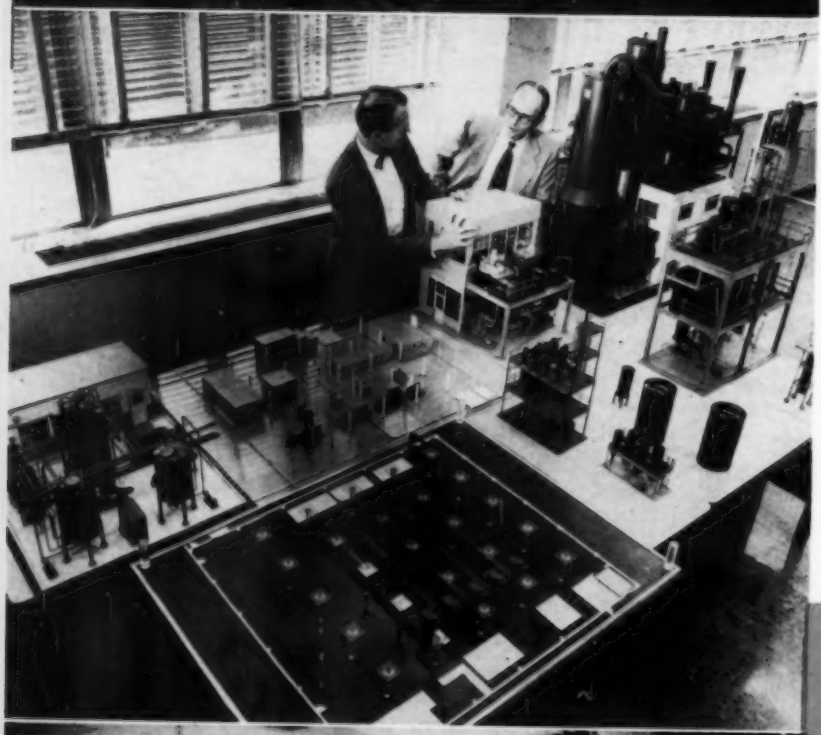
Syndets for Soap

THIS difficulty can be overcome to a large extent through the use of water-softening and sequestering agents or in the replacement of soap with synthetic detergents. Syndets of the cationic type, such as the petro-

(*Turn to Page* 169)

Tank cleaning of aluminum frames before further processing
Oakite Products Photo





New P & G

DEDICATION of the new multi-million dollar Miami Valley research laboratories near Venice, O., of Procter & Gamble Co., Cincinnati, took place Sept. 11-12, slightly over two years after construction was begun in June, 1950.

Neil McElroy, president of Procter & Gamble, presided at the dedication ceremonies at which he revealed that radioactive tracers are now being used to measure how much dirt is removed from soiled clothes as well as that still clinging to the cleaned laundry. This and other examples of recent research into the nature of washing products, shampoos and other beauty products were made public by Mr. McElroy.

The new laboratory building contains the most modern research instruments, design features and other facilities for chemical and engineering research. The staff of 300 who are working in the building include 110 graduate chemists and engineers from 35 U.S. colleges and universities. The new laboratory is working on long range research problems of basic research particularly those pertaining to

CAPTIONS

Exterior view (top) of P&G's new Miami Valley Research Laboratories near Venice, O. Building is two stories of red brick and crab orchard stone. It has basement under part of it and penthouse for air-conditioning equipment over most of it. Above the dining room is open terrace that looks out over farm lands of the Miami Valley.

Factory in miniature (center, left) shows model units which can be studied for correct arrangement of manufacturing units.

The pilot plant area, lower, left, is the largest laboratory at P&G's new research center. Here chemical engineers rig equipment for their first version of a new process.

Scientist (near right, facing page) prepares a machine for mass scrubbing of teeth. In this machine, used in studies to develop experimental dentifrices, a battery of eight toothbrushes is operated at controlled speed and pressure as the brushes scrub extracted teeth with different types of dentifrices. Research scientist and technician (far right) discuss one of the fiberboard escape hatches that may be easily shattered for escape to adjoining laboratory in case fire blocks door.

Research Laboratory

the fundamental properties and behavior of all the ingredients and compounds that might conceivably bear on the subject of soaps, synthetic detergents and related products.

The laboratories were designed by Albert Kahn Associates of Detroit and constructed by Ferro Concrete Construction Co., Cincinnati. The building is composed of two stories and a basement, generally of reinforced concrete with reinforced concrete floors and roof slab. The exterior is red brick, the floors are rubber tiled and the walls largely tiled.

The air conditioned structure provides approximately 127,260 square feet of floor space and is situated on an area of 257 acres on the western or main branch of the Miami River near Venice, O., 17 miles northwest of Cincinnati.

The building includes facilities for biochemistry, physical chemistry, organic and analytical chemistry, as well as engineering laboratories for development and research work and a laboratory to experiment with automatic packing equipment. There is also one of the most modern and best equipped machine shops to be found in any research laboratory in its field at the Miami Valley Laboratory. The building also houses a pilot plant for testing processes on less-than-factory scale, a high pressure laboratory for hydrogenation of oils, and rooms where studies on hair and skin are conducted.

Gas, air, nitrogen, hot, cold and distilled water are available on tap in each laboratory, which feature wood shelves specially treated to make them resistant to laboratory chemicals; air conditioning; steel furniture, rubber tile floors; fluorescent lighting; safety showers; and escape hatches of fiber-board. These panels can be shattered out easily for personnel to escape to the next laboratory in case fire blocks the door.

The new facilities result from the growth of the company, the research program of which had outgrown its quarters in the Manufacturing Administration and Research Building at Ivorydale and had expanded into temporary emergency quarters.

The radiotracer laboratory at Miami Valley contains a two-inch solid lead vault shielded from secondary radiations by steel. The working surfaces of the laboratory tables are made of stainless steel which can easily be decontaminated by washing; the hood of the exhaust over the work areas is made of vinyl coated transite with strippable paint, so that it can be removed if it becomes radio active. The air in the room is drawn off through a separate exhaust system specially filtered for trapping radioactive dust, which is then buried or shipped to Oak Ridge, Tenn., for disposal. All gas, water and other tap handles are built into the front of the work tables, so that research personnel will not have to reach across possibly radio-active surfaces.

A high pressure laboratory is used for the study of various reactions such as one of those used in the manufacture of detergents; in this reaction fat is converted into fatty alcohol, under pressures as high as 5,000 pounds per square inch. The high pressure laboratory is so constructed that an explosion in it will merely blow out its windows or the roof above it, but will not harm the rest of the building.

The technical library at the Miami Valley Laboratories contains one of the finest collections of scien-

(*Turn to Page* 183)

Bacteria removal by

Hand Dishwashing Detergents

A report on anionic detergent performance in hand dishwashing in a small restaurant under actual daily operating conditions.

MANY cleaning agents used in dish washing, including soap, destroy bacteria. Some cleaners are better washing agents than others, more effectively removing from dishes both unwanted organisms and food residues which harbor bacteria. Still other detergents promote the rapid draining of dishes. The final evaluation of the effectiveness of a dishwashing agent depends on these and other factors and can be based only on a study of actual dishwashing operations.

This paper, the second in a series* dealing with dishwashing, reports a study of manual dishwashing carried out in a small restaurant under conditions of operation that were in use day after day. The matter of machine dishwashing would introduce still other factors, particularly the sterilizing effect of hot water. Hand dishwashing involves using water under 120°F. Preliminary tests indicate that the effectiveness of the detergent in destroying bacteria increases as temperatures are elevated.

Determining Bacteria

FOR this work, it was necessary to develop a method for measuring the residual bacteria on the plate. Laboratory tests have shown that when a solution containing a known number of bacteria was applied to a plate and permitted to dry, it was possible to recover 60% of the bacteria by the existing swab contact technique. The bacteria which occur on restaurant dinner plates, on the other hand, as the result of natural soil and as the result of the dishwashing operation, may be so deep-seated that they are not removed even by scouring. For this reason, the swab technique was not considered adequate.

The technique used in this test involved taking dinner plates directly from the restaurant dishwashing operation. These were put into a sterile case which contained two heat-sterilized plates as controls. The restaurant-washed plates were taken into a sterile room, where they were placed over Petri dishes containing agar. Holding both the plate and Petri dish firmly, between the hands, the plates were quickly inverted. The Petri dish thus became the cover plate. With care, little or no agar is lost. The plate with the Petri dish cover was then incubated under the usual conditions. Very accurate results with known cultures of bacteria were obtained using this procedure.

It is not necessarily a measure of bacteria, however, since it could represent centers of infection. Nevertheless, the values are high compared with the swab contact technique. There is no such thing as a perfect count of bacteria, since they are constantly changing in number.

Restaurant Dishwashing Tests

TWO types of tests were run in the same restaurant. One test was carried out with the alkaline type of cleaner under the same conditions regularly used in the restaurant. It was desired to avoid any problems concerning specific mixtures of alkaline salts, which are popular for this work, so for this test pure sodium sesquicarbonate was used. Sodium sesquicarbonate is common to dishwashing compounds and it is sometimes used commercially by itself. The study involved comparison of the relative effectiveness of sodium sesquicarbonate with and without an anionic detergent as measured by residual bacteria. The mixture with the anionic detergent consisted of 80 parts of sodium sesquicarbonate and 20 parts

Table I

Restaurant Dishwashing

Average Bacterial Counts for 10 sq. in. Surface.
Bacteria on Exposed Sterile Dish Controls 3.
Average Temp. Start 46-48°C, End 39-40°C.

	Drain Dried		Towel Dried		Wash Water	
	Alk. (1)	NR (2)	Alk. (1)	NR (2)	Alk. (1)	NR (2)
Wash [1]						
Start	22	3	30	20	4,000	455
Middle	45	4	55	24	6,500	1,025
End	33	5	44	28	12,250	1,600
Wash [2]						
End	24	7	49	26	14,250	2,075

(1) Sodium sesquicarbonate, 1.0% solution.
(2) Mixture, sodium sesquicarbonate 80 parts and Nacconol NR 20 parts in 0.7% solution.

* Laboratory studies were reported in Part I of this article, Proc. of C.S.M.A., June, 1950.

of an alkyl-aryl sulfonate type detergent.**

The most difficult problem in running tests in a restaurant is to avoid any unusual operation or novel application of standard materials. Operators are led to believe very easily that they are under observation. For this reason, one concession was made to insure uniformity. The detergent used in the test was measured by volume, and the same volume was used in each test. Since the detergent mixture was 30% lighter, its actual concentration was 0.7% against 1.0% for the sesquicarbonate alone. The mixture gave surprisingly superior results in spite of the smaller amount used.

By Lawrence Flett and Albert Guiteras*

National Aniline Div., Allied Chemical & Dye Corp. Hudson Laboratories, Inc.

Method of Sampling

IT was shown by the laboratory tests given in Part I of this paper (1) that when soap or the anionic detergent was used, there was a decline in any fixed number of bacteria in the washing solution. However, in a dishwashing operation, fresh bacteria are constantly introduced into the water by dirty dishes. This serves not only to overcome the loss but rapidly to increase the bacteria present in the dish water. In view of this fact, the washed plates on which the bacteria numbers were to be determined, as well as samples of the dish water were taken at the very start of the wash when the plates were first added. This procedure was repeated at the middle of the wash and at its conclusion just before the washing solution was discarded. To guard against continued build-up, tests were also taken at the end of the second wash.

Results of Dishwashing

DATA resulting from examination of the plates and the dish water for bacteria are set forth in Table I. When sesquicarbonate alone was used, bacteria on 10 square inches of the plate's surface ran from 22 to 45. There was no apparent relationship between the number of bacteria on the plate and the number of bacteria in the wash water. They had increased from 4,000 to 12,250-14,250 per ml. during the wash. Where the anionic detergent was used and in spite of the lower concentration, the bacteria counts dropped from 22-45, with the sesquicarbonate alone, to 3-7 for 10 square inches of plate surface. These figures should be corrected, because dishes in a restaurant hand dishwashing operation are handled in the open where they are subject to infection by air-borne bacteria. It was found by exposing sterile plates for the same period of time that the average number of air-borne bacteria picked up under similar conditions was 3 for 10 square inches of surface. When this blank was subtracted from the values as given above, it was found that in the case where the anionic detergent was used, the plates showed a corrected count of 0 to 4 bacteria per 10 square inches, indicating that almost sterile plates were obtained. Where the detergent was present, the bacteria in the dish water ran from 455 to 2075 as against 4000 to 14,250 where the alkali alone was used.

Towel Dried Counts

A PARALLEL test was run in which the plates used in the test were towel dried. There was a large increase in the number of bacteria on the plates after towel drying. It is obvious that this large contamination by towel drying would tend to even out the great differences shown in the drain dried plates. It was found, however, that where the detergent was used, the number of bacteria on the towel dried dishes ran uniformly lower, and in fact almost half of the number of bacteria that were present on the towel dried dishes washed with sesquicarbonate alone.

Dishwashing with Soap

IN THE second test, dishwashing test plates and samples of wash water were taken in the same way as in the first test, but the comparison was made between dishwashing with a synthetic detergent alone and with soap alone, when both were used at equal concentrates. A concentration of 0.15% was taken as being the best average value for common practice.

Results with Straight Detergent

THE results of the test are set forth in Table II. In this case, it will be seen that the bacteria ran from 15-18 for 10 square inches of plate surface in the case of soap. This is almost half of the value for the straight sesquicarbonate shown in the previous table. In the case of the detergent alone, the values ran from 8-11. The sterile dish control handled in the same way as the test dishes picked up air-borne bacteria to give

* Based on a paper presented at 38th midyear meeting C.S.M.A., Boston, June 9. Mr. Guiteras formerly was with Foster D. Snell, Inc., New York, where laboratory work was carried out.

** "Nacconol NR," trade name of National Aniline Div.

Table II

Restaurant Dishwashing

Average Bacterial Counts for 10 sq. in.
Bacteria on Exposed Sterile Dish Controls 3.
Average Temp. Start 46-47°C, End 38°C.

	Drain Dried		Towel Dried		Wash Water	
	Soap	NR(1)	Soap	NR(1)	Soap	NR(1)
Wash [1]						
Start	17	10	92	48	1,000	240
Middle	18	11	57	44	5,520	1,550
End	18	9	56	49	13,680	2,990
Wash [2]						
End	15	8	57	50	19,180	2,810

(1) Nacconol NR, Conc. 0.15%. Soap, Conc. 0.15%.

an average of three bacteria per 10 square inches. This value subtracted from the final results gave a bacteria count of five to seven in the case of the dishes washed with the detergent against 12-15 in the case of soap.

The residual bacteria in the wash water in the case of straight soap did not differ greatly from the values given in table I for straight sesquicarbonate, while the values for the synthetic detergent did not differ much from those obtained by the use of the mixture of 80% of sesquicarbonate and 20% detergent. Since the mixture was used at 0.7% concentration, the synthetic detergent concentration would be 20% of this or 0.14% against 0.15% used in the test shown in table II. The number of bacteria in the wash water in the case of soap increased from 1000 to 19,180, while in the case of straight alkyl aryl sulfonate detergent they ran from 240 to 2990.

Towel Dried Dishes

WHEN the dishes washed with straight soap and detergent were towel dried, the increase in the number of bacteria again tended to reduce the magnitude of the differences found on the drain dried dishes. Nevertheless, the values for the detergent were uniformly lower than those for soap.

Bacteria Depend on Cleanser

THE most remarkable fact in the above data is the lack of any relationship between the residual bacteria on dishes and the number of bacteria in the dish water. In the case of soap, where the bacteria increased from about 1000-20,000, or twenty times, the bacteria counts on the plates were constant within experimental error. This unexpected result is believed to be dependable because the averages reported above represent a large number of values which ran surprisingly uniform. Therefore, the data indicate that the number of residual bacteria on a dinner plate after dishwashing is dependent on the washing agent and not on the number of bacteria on the dirty plate nor on the number of bacteria in the dirty wash water. It is obvious that the number of residual bacteria would also depend on the washing operation. In this case, every effort was made to maintain the usual day-to-day procedure. The uniformity of results which were obtained from day to day on tests of each of the four washing agents would indicate that this uniformity was achieved.

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Toilet Soaps in France

Current trade tendencies in the French toilet soap industry are surveyed in a recent issue of *Soap, Perfumery & Cosmetics*. French industry attributes the slight current decrease in trade to sales-resistance due to stocks laid in at the opening of hostilities in Korea. According to Paul Salen, general secretary of the Syndicate of French Toilet Soap Manufacturers the slump is unlikely to last.

He bases his observation on the fact that the French home market is far from fully developed. Exports are at present not of primary importance. Whereas in many countries, especially in Great Britain and the U. S., the entire populations are toilet-soap concious, it has long been the custom in French rural districts to use a small "end" of household washing soap for toilet purposes, while even in towns and cities plumbing and genuine bathrooms are still luxuries. Washing is often very much of a "lick and a promise" over the kitchen sink. Such methods are not inducive to a large consumption of soap. The French toilet soap manufacturer views the improved post-war housing plans with enthusiasm and claims that, as housing improves in France, soap sales must increase.

Another modern trend viewed with favor by the French toilet soap industry is the increased popularity of powdered detergents, whether genuine soap flakes or synthetics. With these in general use for household purposes, there are no odd ends of household soap to serve for toilet purposes.

French manufacturers conduct important publicity campaigns, literally educating new customers to the idea of toilet soap as something different from just soap. Even now consumption in France is modest compared with that of other countries,

(*Turn to Page* 113)

Synthetic Detergents up to date II

PART IV
CONCLUSION

By John W. McCutcheon

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
RN-35	Riches-Nelson Co.	Alkyl aryl sulfonate	Detergent Wetting	Flake	35%	anionic	Domestic and industrial cleaners.
RN-100	Riches-Nelson Co.	Modified alcohol sulfate	Detergent Wetting	Solid	15%	anionic	Domestic and industrial cleaners.
RN-200	Riches-Nelson Co.	Alkyl aryl sulfonate	Detergent Wetting	Powder	75%	anionic	Water spreader for fires, industrial cleaners, pickling baths.
RN-200A	Riches-Nelson Co.	Alkyl aryl sulfonate	Detergent Wetting	Paste	66%	anionic	Same as RN-200, only in less active strength.
RN-600	Riches-Nelson Co.	Fatty amide derivative	Detergent Wetting	Liquid	87%	nonionic	Mildly cationic in acid solutions and anionic in alkaline ones. Compare also with Alrosol H. Uses: General cleaner, cosmetics.
RN-700	Riches-Nelson Co.	Sod. salt of a secondary alcohol sulfate	Detergent Wetting	Paste	63%	anionic	Acid stability poor, alkali stability good. Use: alkali cleaners, cosmetics, shampoos, etc.
Roccal	Winthrop-Stearns, Inc.	Alkyl dimethyl benzyl ammonium chloride	Germicide	Liquid	10%	cationic	A quaternary amm. salt. Phenol coeff. against S.A. at 37°—407, at 20°—279. Use: Sanitizing agent.
Rodacide Rodacide-A	Rhodes Chemical Co.	A 2.5% Ethyl Cetab plus nonionic detergent	Germicide Detergent	Liquid	2.5%	cationic	A sanitizing agent. Rodacide A is a concentrated solution containing 25% Ethyl Cetab plus correct amount of nonionic detergent.
Rodalon	Fairfield Laboratories	Alkyl dimethyl benzyl ammonium chloride $C_{12}H_{25}N(CH_3)_2(C_6H_5CH_2)$—Cl	Germicide	Paste	100%	cationic	See Octab which is a longer chain derivative. Also sold as a 50% active solution. Uses: Sanitizing solution for dairies, restaurants, etc.
Rodasuds 50	Fairfield Laboratories		Detergent	Liquid	50%	nonionic	A nonionic detergent for use with cationic germicidal agents. (A 100% active material is also available.)
Rol (retail)	Fels & Company		Detergent	Liquid		anionic	A household dishwashing compound. (See Glim also)
S-1079	Glyco Products Co.	High melting point mono ester of glycerides	Emulsifying	Solid	100%	nonionic	A water in oil emulsifier. Use: As an emulsifier for waxes.
Sandopan A	Sandoz Chemical Wks.		Detergent	Paste			Textile.
Sandopan PO Sandopan TFL	Sandoz Chemical Wks.	A sulfonated amine condensate	Detergent	Powder		anionic	Textile. Sandopan TFL is an acid amide wetting and dispersing agent for textiles.
Sandozol N	Sandoz Chemical Wks.	Sulfated ester	Wetting				Textile.
Sanforol 50	Standard Chem. Prod., Inc.	Sulfonated ester	Wetting Rewetting	Liquid		anionic	Textile finishing agent.
Santol S	Charlotte Chem. Labs.		Wetting				Textile.
Santomerse 1 Santomerse 80	Monsanto Chemical Co.	Alkyl aryl sod. sulfonate	Detergent	Flake Powder Beads	40%	anionic	Side chain is long, detergency high. Santomerse 80 is an 80% active form of Santomerse 1.
Santomerse 3 Santomerse 3 Paste	Monsanto Chemical Co.	Alkyl aryl sod. sulfonate	Detergent Wetting	Powder	100%	anionic	Water-soluble to extent of 15%. Also available as a 75% active paste. Santomerse 3 Paste is a 75% active soln. of Santomerse 3.
Santomerse 30X	Monsanto Chemical Co.	Alkyl aryl sod. sulfonate	Detergent	Liquid	25%	anionic	Very acid and alkali stable. Uses: General detergent and wetting agent for textiles.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Santomerse 43	Monsanto Chemical Co.	Amine salt of an alkyl aryl sulfonate	Emulsifying Wetting	Paste	100%	anionic	Both water and oil soluble.
Santomerse D	Monsanto Chemical Co.	Decyl benzene sod. sulfonate	Detergent Wetting	Powder	100%	anionic	Best of Santomerse group for lowering interfacial tension.
Santomerse KDT	Monsanto Chemical Co.		Wetting	Liquid			Oil soluble wetting agent.
Santomerse S	Monsanto Chemical Co.	Alkyl aryl sod. sulfonate	Detergent Wetting	Liquid	30%	anionic	Water solution of Santomerse D.
Santomerse TIB	Monsanto Chemical Co.	Alkenyl carboxylate	Wetting	Powder	99%	anionic	Not acid stable.
Sapamine KWC Sapamine KW	Ciba Co.	Quaternary ammonium composition	Detergent Wetting	Powder	99%	cationic	Textiles. Sapamine KW is a 25% active solution in paste form.
Sapamine MS Conc. Sapamine MS	Ciba Co.	Quaternary ammonium composition	Wetting Emulsifying	Paste	100%	cationic	Will exhaust on textiles. Not to be used with acid or direct colors. Sapamine MS is a 12% active sol. of Sapamine MS Conc.
Sapamine-WL	Ciba Co.	Amine condensate	Penetrant Softener	Paste	33%	cationic	pH of 1% soln. 5.2. Unstable to alkalis—precipitates out. Use: Textiles as softening agent.
Sellogen O-245	Jacques Wolf & Co.	A compound of anionic and nonionic products	Emulsifier	Paste	85%	anionic	An emulsifier for Xylol solutions of DDT, etc.
Sellogen O-141	Jacques Wolf & Co.	Fatty amine condensate	Wetting	Liquid	100%	anionic	A textile scouring and wetting agent.
Sellogen P	Jacques Wolf & Co.	Sulfonated fatty alcohol	Wetting	Liquid	30%	anionic	A textile scouring and wetting agent.
Sequestrene A	Alrose Chemical Co.	Poly amino carboxylic acid salt $CH_2N(CH_2COONa)_2$ | $CH_2N(CH_2COONa)_2$	Sequestrant	Liquid	27%	anionic	Uses: Stabilizes foam and builds detergency for both soaps and syndets; synergist for quaternary ammonium and phenol germicides; formulation of caustic soda bottle washing compounds, milk stone solvents, rust removers; stabilizer for polyphosphates, metasilicates, peroxides; clarifier for shampoos; rancidity retardant for soaps.
Sequestrene AA	Alrose Chemical Co.	Poly amino carboxylic acid $CH_2N(CH_2COOH)_2$ | $CH_2N(CH_2COOH)_2$	Dispersant	Powder	100%	anionic	A crystalline solid of m.p. 220° C. Water insoluble. May be neutralized to Sequestrene A or to the potassium or amine salts. Fairly stable up to 200° C.
Sequestrene NA-2 Sequestrene NA-3 Sequestrene NA-4 Sequestrene ST	Alrose Chemical Co.	Tech. pure disodium ethylene diamine tetra acetate dihydrate	Dispersant	Solid		anionic	Solubility: 10% in water at room temp. pH—5.0. Sequestrene NA-2-dihydrate of the disodium salt. Sequestrene NA-3-monohydrate of the trisodium salt. Sequestrene NA-4 is the dihydrate of the tetra sodium salt. Sequestrene ST is the same as NA-4 in 80% active powder form.
Shasta (retail)	Procter & Gamble Co.		Detergent	Cream		anionic	Hair shampoo.
Sipon L-20	American Alcolac Corp.	Ammonium salt of lauryl alcohol sulfate	Detergent	Liquid	30%	anionic	A shampoo and cosmetic base material. Also liquid detergent base.
Sipon L-22	American Alcolac Corp.	Ammonium salt of lauryl alcohol sulfate	Detergent	Liquid	30%	anionic	A shampoo and cosmetic base material. Also liquid detergent base.
Sipon LS	American Alcolac Corp.	Sodium salt of lauryl alcohol sulfate	Detergent	Liquid	30%	anionic	A shampoo and cosmetic base material.
Sipon LS/B	American Alcolac Corp.	Sodium salt of lauryl alcohol sulfate (low mineral salt content)	Detergent	Liquid	33%	anionic	A shampoo and cosmetic base material.
Sipon LT	American Alcolac Corp.	Triethanolamine salt of lauryl alcohol sulfate	Detergent	Liquid	50%	anionic	A shampoo and cosmetic base material; also liquid detergent base.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sitol Flakes	E. I. du Pont de Nemours & Co.	Nitrobenzene meta di-sodium sulfonate	Wetting	Powder		anionic	Mild oxidizing agent for direct and developed dyes. Uses: Textiles.
Skill 181A Skill 234B	Gallowhur Chem. Co.	A modified alkyl sulfonate	Emulsifier	Liquid	100%	anionic	Emulsifier for chlordane. Skill 234B is designed for toxaphene and chlordane in aromatic solvents.
Skortex	Wyandotte Chem. Corp.	Alkyl aryl sod. sulfonate plus builders	Detergent	Powder		anionic	A compounded laundry detergent.
Soaps—amine	Misc.	As in name	Emulsifier Detergent			anionic	Amine soaps for use as emulsifiers include following, mono, di, triethanolamine, isopropanolamine, morpholine, trigamine, trihydroxy methyl amino methane, 2 amino-2 ethyl-1,3 triethylene tetramine propanediol, etc.
SLC-50	Joseph Turner & Co.	Amine salt of dodecylbenzene sulfonate	Detergent	Liquid	50%	anionic	
Soapotol	Commonwealth Color & Chemical Co.	Salt of a sulfonated fatty amide	Detergent	Powder	9%	anionic	Textiles. A more concentrated form is Cominol.
Soapotol LF	Commonwealth Color & Chemical Co.	An amine condensation product	Wetting Penetrating	Liquid	34%	nonionic	Leather industry for back wetting.
Softener FG	Synthetic Chemicals, Inc.		Wetting Dispersing	Paste			Textile softening agent and dispersant for starch, rosin, etc.
Soliol Base H-60	Oil States Petroleum Co.	High molecular weight petroleum sodium sulfonate	Detergent	Paste	63%		A rust proofing agent and detergent for petroleum oils.
Soliol Base N-60	Oil States Petroleum Co.	Petroleum sulfonates	Emulsifier Detergent Wetting	Paste	63%		
Soluble Base 11 Soluble Base 600	Carlisle Chem. Works	An alkyl sod. sulfonate plus emulsifiers	Emulsifier	Liquid	92%	anionic	An oil in water emulsifier for preparing soluble oils. Moderately soluble in water, very soluble in benzene, mineral oil, alcohol. Soluble Base 600 same only designed for use with kerosene emulsions.
Solvadine BL Conc.	Ciba Co.	Sod. salt of alkyl naphthalene sulfonic acid	Emulsions	Powder		anionic	Textiles—kier boiling.
Solvadine G	Ciba Co.	Alkyl aryl sodium sulfonate	Wetting Emulsifying	Flake		anionic	Similar to Solvadine NC Conc. only with added electrolyte and dried. Uses: Textiles, wool carbonizing, etc. Detergent, wetting and penetrating agent.
Solvit	Emulsol Corp.	Diacetyl tartaric acid ester of fatty acid-mono and diglycerides	Emulsifier	Liquid		anionic	Emulsifier for oil-soluble vitamins.
Sorapon SF-73	Antara Chemicals Div. General Dyestuff Corp.	Sodium alkyl aryl sulfonate	Detergent Wetting	Beads	35%	anionic	Stable to hard water, acid and alkali. For household and industrial use where fluffy material is required. Foamer.
Sorapon SF-78	Antara Chemicals Div. General Dyestuff Corp.	Sodium alkyl aryl sulfonate	Wetting Dispersant Detergent	Flake	85%	anionic	Stable to hard water, acid and alkali. Uses: Household and industrial products.
Sorbit AC	Alrose Chemical Co.	Mono and dibutyl naphthalene sod. sulfonate	Wetting Emulsifying	Paste	65%	anionic	Highly soluble in water and alkalis, recommended for heavy duty metal cleaners and also as a solubilizing agent and coupling agent for liquid detergents.
Sorbit LA	Alrose Chemical Co.	A modified alkyl naphthalene sod. sulfonate	Wetting	Paste		anionic	Improved hard water resistance.

Trade Name	Manufacturer	Class and Formul	Main Uses	Form	% Conc.	Type	Remarks
Sorbit P	Alrose Chemical Co.	Mono, dibutyl naphthalene sod. sulfonate	Wetting	Powder	75%	anionic	Same as Sorbit AC only in powdered form. A 93% powder is also available.
Sorolene G Paste	Onyx Oil & Chem. Co.	Alkyl naphthalene sod. sulfonate	Wetting Dispersing	Paste		anionic	A textile dye assistant and scouring agent.
Soromine BNS	Antara Chemicals Div. General Dyestuff Corp.		Softener	Paste		cationic	Use: Textile softening agent.
Soromine BSA	Antara Chemicals Div. General Dyestuff Corp.		Softener	Paste		cationic	Highly substantive to cellulosic fibers. Improves fastness of direct dyeings to water and perspiration.
Soromine BSS	Antara Chemicals Div. General Dyestuff Corp.		Softener	Paste		cationic	Softening effect greatest on cellulosic fibers. Readily soluble in water.
Soromine FW	Antara Chemicals Div. General Dyestuff Corp.		Softener Lubricant	Paste		anionic	Softener for cellulosic fibers which does not yellow bleached whites.
Sotex-N Sotex-NC Sotex-CW Sotex-3CW Sotex-C Sotex-WO Sotex-CX Sotex-487	Synthetic Chemicals, Inc.		Dispersant	Liquid			A dispersant for paints, etc. Modified types are designated Sotex-C, -CW and -NC, etc. Sotex N is useful in quick lake enamels, Sotex 3CW is a W/O emulsifier, Sotex NC is useful as a pigment disperser in nitrocellulose plasticizers.
Span 20	Atlas Powder Co.	Sorbitan monolaurate	Emulsifier	Liquid	100%	nonionic	General emulsifier—antifoaming agent.
Span 40	Atlas Powder Co.	Sorbitan monopalmitate	Emulsifier	Solid	100%	nonionic	General emulsifier.
Span 60	Atlas Powder Co.	Sorbitan monostearate	Emulsifier	Solid	100%	nonionic	General emulsifier (large application in foods).
Span 65	Atlas Powder Co.	Sorbitan tristearate	Emulsifier	Solid	100%	nonionic	General emulsifier.
Span 80	Atlas Powder Co.	Sorbitan monooleate	Emulsifier	Liquid	100%	nonionic	General emulsifier—forms W/O emulsions.
Span 85	Atlas Powder Co.	Sorbitan trioleate	Emulsifier	Liquid	100%	nonionic	General emulsifier.
Sprex AC	Du Bois Co.	Alkyl aryl sod. sulfonate modified with a nonionic	Detergent	Powder		anionic	A general detergent for use in the food industry.
SS 96	James Varley & Sons, Inc.		Detergent	Liquid			
Stablex A	Heveatex Corp.	Naphthalene sod. alkyl sulfonate	Wetting			anionic	Latex stabilizing and compounding agent.
Stablex B	Heveatex Corp.	Sod. naphthalene sulfonate	Dispersing			anionic	Dispersing agent and latex compounding material.
Stablex C	Heveatex Corp.	Petroleum sod. sulfonate	Wetting			anionic	Latex stabilizer.
Standapol	Standard Chem. Prod., Inc.	Sulfonated vegetable oils	Emulsifier Lubricant	Liquid		anionic	A textile lubricant and softener.
Stanteosine B Stanteosine B-10 Stanteosine M-10	Standard Chem. Prod., Inc.	A fatty amine condensate	Softener	Paste	40%		Stanteosine B-10 and M-10 are 45% active substituted fatty alkanolamides.
Stantex 322	Standard Chem. Prod., Inc.	Sulfated fatty ester	Wetting Dispersing	Liquid	65%	anionic	Textile dyeing assistant, etc.
Sterox AH	Monsanto Chemical Co.	Aliphatic nonionic polyoxyethylene ether	Detergent Wetting	Liquid		nonionic	Sterox AH is less water soluble than Sterox AJ. Is primarily intended as a wetting agent. In development stage.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sterox AJ	Monsanto Chemical Co.	Aliphatic nonionic polyoxyethylene ether	Detergent Wetting	Liquid		nonionic	Use: for dishwashing and general household use as well as in various industrial applications such as metal cleaners and in the field of emulsifiers. Now in development stage.
Sterox CD	Monsanto Chemical Co.	Polyoxyethylene ester	Detergent	Liquid	100%	nonionic	More soluble in cold than hot water. 2% in water at 140-160° F. gives a cloudy soln. Detergency good.
Sterox DNK	Monsanto Chemical Co.	Built nonionic	Dispersing	Powder		nonionic	Designed for use in de-inking of paper.
Sterox SE Sterox SK	Monsanto Chemical Co.	Polyoxyethylene thicether	Detergent	Liquid	100%	nonionic	Dishwashing, metal cleaners, textiles, etc. Sterox SK is more surface active and less water sol. than Sterox SE.
Sterox 5 Sterox 6	Monsanto Chemical Co.	Polyoxyethylene thioether	Detergent	Liquid	85%	nonionic	Sterox 5 and 6 are the same as Sterox SE and SK respectively, only cut with water to 85% active.
Sulfanole AN	Warwick Chemical Co.	A fatty acid amine condensate	Detergent Emulsifier	Liquid	100%	anionic	Textiles.
Sulfanole CP	Warwick Chemical Co.	Amide sulfate	Detergent Emulsifying	Paste		anionic	Textile, various operations.
Sulfanole FAF	Warwick Chemical Co.	Sodium salt of an alcohol sulfate	Detergent	Liquid	30%	anionic	Use: Rug and upholstery cleaners. Cream and paste shampoos.
Sulfanole KA	Warwick Chemical Co.	Amine salt of an alkyl aryl sulfonate	Detergent Wetting	Liquid	60%	anionic	Use as industrial and domestic cleaner.
Sulfanole KB-40 Sulfanole SA	Warwick Chemical Co.	Sodium salt alkyl aryl sulfonate	Detergent Wetting	Powder	40%	anionic	General cleanser for industrial and home use. Sulfanole SA is a salt-free solution for car washes, rug shampoos, etc.
Sulfanole NF	Warwick Chemical Co.	Polyoxyethylene derivative	Detergent Wetting	Powder		nonionic	For automatic washing machines, low sudsing.
Sulfanole R	Warwick Chemical Co.	Fatty acid protein condensate	Detergent	Liquid		anionic	Textile scouring, etc.
Sulfatate B1	Glyco Products Co.	Alkyl aryl sod. sulfonate	Wetting Penetrant	Liquid	35%	anionic	Water soluble, non-toxic. Uses: Textiles, paper, leather, cosmetics.
Sulfatex	L. Sonneborn Sons, Inc.	Sulfated amine	Detergent	Paste	30%		
Sulframin AB Sulframin ABW Sulframin AB Conc. Sulframin AB-20 Sulframin AB-40 Sulframin AB-40 Flakes	Ultra Chemical Works	Dodecyl benzene sulfonates, plus possibly alkyl amido sulfates	Detergent Wetting	Flake	38%	anionic	Textile, leather, misc. cleaning household. Sulframin ABW similar only of less conc.—25%. Sulframin AB Conc. An 85% active conc. of above. Sulframin AB-20 is a 20% aqueous solution of Sulframin AB Conc. Sulframin AB-40 is a 40% soln. of AB Conc.
Sulframin DH Sulframin DHL Sulframin DHL Conc.	Ultra Chemical Works	Sod. salt of an alkyl amide sulfate	Detergent Wetting	Paste		anionic	Textile scouring, dye assistant, etc. Sulframin DHL is a 16½% solution of above. Sulframin DHL Conc. is a 31% active solution.
Sulframin DR	Ultra Chemical Works	Sod. salt of an hydroxy alkyl amido alcohol sulfate	Dispersing Penetrating	Liquid	25%	anionic	Liquid cleansers, shampoos, textile assistant.
Sulframin DT Powder Sulframin Paste	Ultra Chemical Works	Sod. salt of an alkyl amino sulfate	Detergent	Powder	14%	anionic	Similar to Sulframin LW only with less lauric acid content which increases its hot water detergent properties. Not stable to strong alkali or acids. Uses: Industrial and household cleansers, cosmetics. Also available in slightly more concentrated form as a paste.

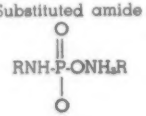
Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sulframin E	Ultra Chemical Works	Modified alkyl aryl sulfonate	Detergent	Liquid		anionic	
Sulframin KE	Ultra Chemical Works	Alkyl aryl sulfonate	Detergent	Liquid		anionic	
Sulframin LW	Ultra Chemical Works	Sod. salt of an alkyl amino sulfate. (More lauric acid content than Sulframin DT)	Detergent	Powder	17%	anionic	Cold water detergent. Uses: Textiles, household cleaner, cosmetic preparations, etc.
Sulframin N	Ultra Chemical Works	Sod. salt of dialkylnaphthalene sulfonic acid	Wetting	Paste	55%	anionic	Non-foaming, acid and alkali stable. Textiles, for wool carbonizing and mercerizing cotton.
Supersulfate FS	Laurel Soap Co.	Sulfated aryl alcohol	Detergent			anionic	
Surf (retail)	Lever Bros. Co.	Sod. alkyl aryl sulfonate, plus builders	Detergent	Powder		anionic	A heavy duty household cleanser. See also Tide, Fab, etc.
Surface Active Agent-BPE Agent-TR	American Cyanamid Co.	Bis (p-tert-butyl phenoxyethyl) sodium sulfosuccinate	Wetting	Solid	100%	anionic	Pilot plant production. No data on use. Agent TR is bis (tridecyl) sod. sulfosuccinate.
Surfax 505	E. F. Houghton & Co.	Fatty ester	Emulsifier Wetting	Liquid	100%	nonionic	A rewetting agent for paper as for wet strength paper toweling, etc.
Surfax 1288	E. F. Houghton & Co.	Alkyl aryl sulfopropionic ester	Wetting Penetrant	Liquid	60%	anionic	Textile, for wetting and rewetting, particularly in neutral or mildly alkaline solutions. Used as dye-bath leveler.
Surfax WO	E. F. Houghton & Co.	Highly sulfated fatty ester	Wetting Penetrant	Liquid	64%	anionic	Combined penetrant, softener wetting and rewetting agent.
Swerl (retail)	National Aniline Div. Allied Chem. & Dye Corp.	Alkyl aryl sulfonate	Detergent	Powder		anionic	A Nacconol base product.
Syntergen MV	Hart Products Corp.	Sulfated fatty acid amide	Detergent Wetting	Paste		anionic	A water soluble scouring agent for the textile trade.
Synthetics B-48	Hercules Powder Co.	Ethylene oxide rosin condensate	Detergent Emulsifier	Liquid	100%	nonionic	Recommended for use in low-foaming detergent powders and for use as emulsifiers.
Synthetics B-79	Hercules Powder Co.	An ethylene oxide condensate of an alkylated phenol	Detergent Emulsifier	Liquid	100%	nonionic	For use in detergent formulations, as a wetting agent, latex stabilizer, an emulsifier for agricultural sprays, and as a textile processing aid.
Synthetics B-97	Hercules Powder Co.	An esther-ether condensate	Detergent Emulsifier	Liquid	100%	nonionic	Same as Synthetics B-79.
Synthetics D-37	Hercules Powder Co.	An ethylene oxide condensate based on hydroabietyl alcohol	Detergent Emulsifier	Paste	100%	nonionic	Recommended for use in low-foaming detergent powders and for use as emulsifiers. Insecticidal emulsion formulations, resin dispersions, and rubber latices. Also available as a liquid of 85% active ingredient.
Tamol N	Rohm & Haas Co.	Sod. salt of a condensed sulfonic acid	Dispersing	Powder	87-91%	anionic	A dispersant for pigments, carbon black, clay, dyestuffs, insecticides, fungicides.
Teel (retail)	Procter & Gamble Co.		Detergent	Liquid		anionic	Dentifrice.
Teepol (British)) (Flakes & Pdr.)	Shell Chemical Ltd., London, England	Secondary sod. alkyl sulfate	Detergent Wetting	Liquid	22%	anionic	From cracked petroleum olefines by sulfation. Detegrency inferior to primary alcohol sulfates. Wetting power superior to them. Uses: General cleaning, cosmetics, paints, rubber, etc. See also U. S. Pat. 2,422,613. Also available as a double strength 42% active powder and flake.

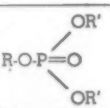
Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Teepex	Shell Chemical Ltd., London, England	Secondary sod. alkyl sulfate	Detergent	Paste	42%	anionic	Same as Teepol in a paste form. See also Lensex.
Tegin	Goldschmidt Chem. Co.	Glycerol monostearate	Emulsifier	Flake	100%	nonionic	Self emulsifying; cosmetics, pharmaceutical.
Tegin 515	Goldschmidt Chem. Co.	Glycerol monostearate	Emulsifying	Flake	100%	nonionic	Non-self emulsifying. Uses: cosmetics, etc.
Tegacid	Goldschmidt Chem. Co.	Glycerol monostearate	Emulsifying	Flake	100%	nonionic	Self emulsifying. Uses: cosmetics, etc.
Tegin P	Goldschmidt Chem. Co.	Propylene glycol monostearate	Emulsifying	Flake	100%	nonionic	Self emulsifying. Uses: Cosmetics, pharmaceuticals.
1011	E. F. Drew & Co.	A secondary amide of lauric acid	Detergent Wetting	Liquid	100%	nonionic	See also Wetsyn.
Tenesol	Charlotte Chem. Lab.		Wetting				Textiles.
Tenlo 10	Griffin Chemical Co.	Polyhydric alcohol ester	Wetting	Liquid	100%	nonionic	Water-oil soluble.
Tenlo 46A	Griffin Chemical Co.		Wetting	Liquid	30%	anionic	Water soluble.
Tenlo 70	Griffin Chemical Co.		Wetting	Liquid	100%	anionic	Pigment mixing and grinding aid.
Tenlo 400 Tenlo 420	Griffin Chemical Co.	Polyhydric alcohol sulfonic acid derivative	Emulsifier	Liquid	100%	anionic	For weed oils.
Tensol	Synthetic Chemicals, Inc.	Sulfonated naphthalene alkyl ether	Wetting	Paste			Textiles, leather, rubber.
Tergenol G	Hart Products Corp.	A modified alkyl sulfate	Detergent	Gel.			Textile scouring.
Tergitol 08	Carbide & Carbon Chem. Corp.	Sod. sulfate deriv. of 2-ethyl hexanol-1 $C_4H_9CH(C_2H_5)CH_2SO_4Na$	Wetting Emulsifying	Liquid	38%	anionic	Very stable to high electrolyte. Mercerizing, penetrant.
Tergitol 4	Carbide & Carbon Chem. Corp.	Sod. sulfate deriv. of 7-ethyl-2 methyl-undecanol-4	Wetting Emulsifying	Liquid	25%	anionic	Used for emulsion polymers where electrolyte is between 2 to 5%, or acid content between 1-10%. Carbonizing wool.
Tergitol 7	Carbide & Carbon Chem. Corp.	Sod. sulfate derivative of 3,9-diethyl tridecanol-6	Wetting Emulsifying	Liquid	25%	anionic	Used where electrolyte is below 1%. Textiles, rubber latices, leather, pharmaceutical.
Tergitol Dispersant TD	Carbide & Carbon Chem. Corp.	Alkyl polyglycol ether	Dispersant Emulsifier	Liquid	100%	nonionic	Similar to Tergitol TMN except in alkyl chain length.
Tergitol Dispersant TMN	Carbide & Carbon Chem. Corp.	Alkyl polyglycol ether	Emulsifier Dispersant Wetting	Liquid	100%	nonionic	A lime soap dispersant for use with soap emulsifiers with 2-4 D dispersions, etc. Also as lime soap dispersant in boiler feed waters, etc.
Tergitol EH	Carbide & Carbon Chem. Corp.	$CH_3CH_2CH_2CH{=}C(C_2H_5)CH_2SO_3Na$	Wetting Penetrating	Liquid	25%	anionic	Developed for concentrations of electrolytes higher than Tergitol 08. Uses: electrolyte baths, mercerizing of cotton, metal cleaners, etc.
Tergitol P-28	Carbide & Carbon Chem. Corp.	Sod. di (2-ethyl hexyl) phosphate	Wetting Emulsifying	Liquid	25%	anionic	Insoluble in acid, stable in alkali. Uses: Textiles kier boiling, dyeing, cleaners, etc.
Terjolate (retail)	White Laboratories, Inc.	Sod. octadecanoate N-diethanol, N-alkyl-amide et al	Detergent	Liquid		anionic	A companion product of Acidolate and Dermolate. Non-irritating to the skin. Uses: General purpose cleanser for household, etc. See also pHisoderm.
Tetranol	Arkansas Co.	Sod. sulfate of a fatty acid ester	Wetting	Liquid	50%	anionic	Use: Textile, penetrant and leveling agent in dyebaths.
Tetrosan	Onyx Oil & Chemical Co.	Alkyl di...ethyl 3:4-dichlorobenzyl ammonium chloride. Also contains alkenyl dimethyl ethyl ammonium bromide	Germicide	Liquid	60%	cationic	Sanitizing agent.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Texol	Burkart-Schier Chem. Co.	A fatty acid condensate	Detergent Wetting	Liquid	10%		A detergent for the textile trade.
Tide (retail)	Procter & Gamble Co.		Detergent	Granular		anionic	Built all purpose detergent.
Titadine TA	Titan Chem. Products, Inc.	Mixture of alkyl naphthalene sulfonic acid ester and sulfated alcohol	Wetting				Textiles, leather, paper, household detergents, etc.
Titamine TCP	Titan Chem. Products, Inc.	Derivative of sulfonated alcohol	Wetting Emulsifying				Textiles, leather, paper, household detergents, etc.
Titan Decitrene	Titan Chem. Products, Inc.	Alkylated aromatic sulfonate	Wetting				Textiles, leather, paper, household detergents, etc.
Titanole RMA	Titan Chem. Products, Inc.	Alkylated aryl sod. sulfonate	Wetting				Textiles, leather, paper, household detergents, etc.
Titazol SA	Titan Chem. Products, Inc.	Sod. alkyl naphthalene sulfonate	Wetting				Textiles, leather, paper, household detergents, etc.
Toluenesulfonate, Sod. salt	Wyandotte Chemicals Corp.	As named	Wetting Hydrotrope	Powder	94%	anionic	Similar in use to xylene and benzene sulfonates. A solubilizing agent. Also available in a 40% active solution.
Toximuls	Ninol Laboratories	Anionic complex	Emulsifier	Liquid		anionic	Insecticide emulsifiers.
Trak	Burkart-Schier Chemical Co.	Nonionic ester plus builders	Detergent	Powder	40%	anionic	Textile heavy duty scouring agent.
Trem 014 Trem 024 Trem 615 Trem 618	Griffin Chemical Co.	Polyhydric alcohol ester	Emulsifier	Liquid	100%	nonionic	For agricultural emulsifiable insecticide concentrates.
Trend (retail)	Purex Corp., Ltd.	An alkyl aryl sulfonate, plus builders	Detergent	Powder		anionic	General type household cleaner.
Trex 40 Trex 45 Trex 60 Trex 80	Griffin Chemical Co.	Polyhydric alcohol sulfonic acid derivative	Emulsifier	Liquid	100%	anionic	Trex 40 for DDT. Trex 45 for Toxaphene. Trex 60 for Chlordane in Oil. Is a paste. Trex 80—chlordane solubilizer.
Trinolex	Commonwealth Color & Chem. Co.	Alkyl aryl sod. sulfonate	Detergent Wetting	Solid	84%	anionic	A textile scouring agent.
Triton B-1956	Rohm & Haas Co.	Modified phthalic glycerol alkyd resin	Emulsifier	Liquid	77%	nonionic	Used as a spreader, in insecticide and fungicide sprays for fruits and vegetables and an emulsifier in insecticide formulations.
Triton K-60	Rohm & Haas Co.						See Triton X-400. Two names for same product.
Triton NE	Rohm & Haas Co.	Alkyl aryl polyether alcohol	Detergent Emulsifier Dispersing Wetting	Liquid	33%	nonionic	Aqueous solution of Triton X-100, see remarks under Triton X-100.
Triton W-30 Conc.	Rohm & Haas Co.	Sod. salt of alkyl aryl polyether sulfate	Wetting	Liquid	27%	anionic	Levelling and wetting agent for textile processing. Agent for wetting back-crusted chrome leather.
Triton X-45	Rohm & Haas Co.	Alkyl aryl polyether alcohol	Detergent Dispersant Wetting	Liquid	100%	nonionic	Insecticide emulsifier. Dry cleaning detergent, dispersing and wetting agent in organic systems.
Triton X-100	Rohm & Haas Co.	Alkyl aryl polyether alcohol	Wetting Detergent Dispersing Emulsifying	Liquid	100%	nonionic	Household and industrial cleaners. Textile processing, wool scouring, emulsifying agent for insecticides and herbicides, electroplating baths, fire fighting, dispersant in many fields. Adjunct to solvents in degreasing skins prior to tanning.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Triton X-120	Rohm & Haas Co.	Alkyl aryl polyether alcohol	Wetting Dispersing	Powder	40%	nonionic	Wetting and dispersing agent in agricultural wettable powders.
Triton X-155	Rohm & Haas Co.	Alkyl aryl polyether alcohol	Wetting Detergent Emulsifying	Liquid	100%	nonionic	Emulsifying agent for insecticides, herbicides and spray oils. Degreasing baths. Organic systems.
Triton X-200	Rohm & Haas Co.	Sod. salt of alkyl aryl polyether sulfonate	Detergent Wetting Emulsifying	Liquid	28%	anionic	Metal cleaning, pickling and plating baths. Household cleaning formulae. Shampoos, solubilizer for cosmetic preparations, textile processing, degreasing agent on skins prior to tanning.
Triton X-301	Rohm & Haas Co.	Sodium salt of alkyl aryl polyether sulfate	Detergent Wetting Penetrant	Paste	20%	anionic	Household and industrial cleaners. Any place where Triton 770 Conc. can be used and the presence of isopropanol is objectionable.
Triton X-400	Rohm & Haas Co.	Stearyl dimethyl benzyl ammonium chloride	Emulsifier Wetting	Paste	25%	cationic	Cationic hair rinses. Resin emulsifier, treating cellulosic materials, softening textiles, color fixing, emulsifying chlorinated hydrocarbons. Identical with Triton K-60.
Triton X-770 Conc.	Rohm & Haas Co.	Sod. salt of alkyl aryl polyether sulfate plus isopropanol	Detergent Wetting Penetrant	Liquid	30%	anionic	Detergents, waxes, cleaners, rag cooking, general wetting agent and textile processing. Degreasing agent on skins prior to tanning.
Triumph	Armour & Co.	Polyoxyethylene ester of a fatty acid	Detergent Wetting	Powder	17%	nonionic	Active varies 14 to 20%. Use: Laundries.
Tween 20	Atlas Powder Co.	Polyoxyethylene sorbitan monolaurate	Emulsifier Solubilizer	Liquid	100%	nonionic	General emulsifier—used to solubilize essential oils and vitamins
Tween 21	Atlas Powder Co.	Polyoxyethylene sorbitan monolaurate	Emulsifier Wetting	Liquid	100%	nonionic	Good wetting agent—shorter polyoxyethylene chain than Tween 20.
Tween 40	Atlas Powder Co.	Polyoxyethylene sorbitan monopalmitate	Emulsifier	Liquid	100%	nonionic	General emulsifier.
Tween 60	Atlas Powder Co.	Polyoxyethylene sorbitan monostearate	Emulsifier	Liquid	100%	nonionic	General emulsifier—large application in foods.
Tween 61	Atlas Powder Co.	Polyoxyethylene sorbitan monostearate	Emulsifier	Solid	100%	nonionic	General emulsifier—shorter polyoxyethylene chain than Tween 60.
Tween 65	Atlas Powder Co.	Polyoxyethylene sorbitan tristearate	Emulsifier	Solid	100%	nonionic	General emulsifier—large application in foods.
Tween 80	Atlas Powder Co.	Polyoxyethylene sorbitan monooleate	Emulsifier Solubilizer	Liquid	100%	nonionic	General emulsifier—used to solubilize essential oil and vitamins.
Tween 81	Atlas Powder Co.	Polyoxyethylene sorbitan monooleate	Emulsifier	Liquid	100%	nonionic	General emulsifier—shorter polyoxyethylene chain than Tween 80.
Tween 85	Atlas Powder Co.	Polyoxyethylene sorbitan trioleate	Emulsifier	Liquid	100%	nonionic	General emulsifier.
Twitchell 7250 Oil	Emery Industries, Inc.	Sulfated fatty acid derivative	Emulsifying	Liquid	100%	anionic	Use for replacement of sulfonated olive and castor oils. Formerly known as Twitchell Oil E 476R.
Twitchell 7231 Oil	Emery Industries, Inc.	Sulfonated mineral oil	Emulsifying	Liquid	100%	anionic	Textile finishing. Formerly the 7231 Oil was known as 3X.
Ultrapole-S Ultrapole G Extra Conc.	Ultra Chemical Wks.	Fatty acid amine condensate	Detergent Emulsifier	Liquid	98-100%	nonionic	Water soluble in all proportions. Superior to Sulframines for detergency. A thickening and foam stabilizing agent. Use: With alkyl aryl sulfonates in shampoos, etc. Ultrapole G is a modified Ultrapole S which will tolerate substantial quantities of alkali when made up into stock solutions. Primarily used in textile processing.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Ultrapone DL	Ultra Chemical Wks.	Lauroyl diethanolamine amide	Emulsifying	Liquid	100%	cationic	Water dispersible. Oil and water dispersible.
Ultrapone LR	Ultra Chemical Wks.			Liquid			
Ultravon K Ultravon W	Ciba Co.	Derivative of benzimidazole compound	Detergent	Powder		anionic	Detergent; wetting and penetrating agent.
Ultrawet DS	Atlantic Refining Co.	Alkyl benzene sod. sulfonate	Detergent Wetting	Flake	85%	anionic	Medium molecular weight; better solubility than Ultrawet K series.
Ultrawet K	Atlantic Refining Co.	Alkyl benzene sod. sulfonate	Detergent Wetting	Flake	85%	anionic	High molecular weight. High foam and detergency.
Ultrawet SK	Atlantic Refining Co.	Alkyl benzene sod. sulfonate	Detergent Wetting	Bead	35%	anionic	Ultrawet K base plus sod. sulfate.
Ultrawet 30 DS	Atlantic Refining Co.	Alkyl benzene sod. sulfonate	Detergent Wetting	Liquid	25%	anionic	Liquid form of Ultrawet DS.
Ultrawet 35 KX	Atlantic Refining Co.	Alkyl benzene sod. sulfonate	Detergent Wetting	Liquid	31%	anionic	Liquid slurry. Form Ultrawet K.
Ultrawet 60L	Atlantic Refining Co.	Alkyl benzene sulfonate of an organic salt	Detergent Wetting	Liquid	60%	anionic	A shampoo and household detergent base material. Very low in inorganic salts.
Unitex	Commonwealth Color and Chemical Co.	Sod. salt of alkylate aromatic sulfonate	Detergent Wetting		27%		Textiles.
Vatsol	American Cyanamid Co.	Same as corresponding Aerosols	Wetting Dispersing		100%	anionic	This name applies to Aerosols when sold through Insecticide Dept. of Am. Cyanamid Co. Otherwise identical as shown below. Vatsol OT=Aerosol OT Vatsol OS=Aerosol OS
Vel (retail)	Colgate-Palmolive-Peet Co.	An alkyl aryl sod. sulfonate	Detergent Wetting	Powder	31%	anionic	See also Dreft, or other retail products.
Veripon, Tech.	Veriset Corp.	A protein condensation product with a fatty acid derivative	Detergent Wetting	Liquid	42%	anionic	A highly foaming detergent, stable in hard water and alkali, but not stable in acid. See also Maypon K.
Veripon-Cosmetic	Veriset Corp.	A protein condensation product with coconut oil fatty acids	Detergent Wetting	Liquid	44%	anionic	A shampoo and cosmetic base material. Compare with Maypon 4C.
Versene-FE-3 Specific Versene-FE-3 Versene-T	Bersworth Chem. Co.	Sod. salt of ethylenediamine tetra acetic acid	Sequestering	Liquid	34%	anionic	A diamino tetracarboxylic acid salt in the same class as Nullapon B, Sequestrene, etc. Versene Fe-3 is designed for sequestering divalent and trivalent ions, particularly iron. It is the sod. salt of a carboxy methylated amine. Conc. 100%. Versene Fe-3 Specific, is 47% active. Versene-T is designed for complexing iron in highly alkaline solutions. It is a modified sod. salt of a carboxy methylated amine in 55½% conc.
Victamine C	Victor Chemical Works	Substituted amide of alkyl phosphate  R=$C_{18}H_{35}$- R'=Water solubilizing group	Emulsifying	Liquid	100%	cationic	Textile softening agent. Also available in predispersed form at lower concentration.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Victamine D	Victor Chemical Works	Same as Victamine C except R=$C_{18}H_{37}$	Emulsifying	Solid Wax	100%	cationic	Textile softening agent. Oil additive for antirust properties. Also available in predispersed form.
Victamul 20 Victamul 24C Victamul 27 Victamul 89 Victamul 116C	Victor Chemical Works	Organic esters of phosphate	Emulsifying	Liquid & Solid	100%	nonionic	A series of compounds varying in water and organic solvent solubility. Use: petroleum industry.
Victawet 12 Victawet 14	Victor Chemical Works	 R=medium alkyl group R'=water solubilizing group	Wetting Penetrant Dispersing	Liquid	100%	nonionic	Package dyeing of nylon, acid type cleaners, starch coatings. Non-foaming. Victawet 14 is similar to 12 with a molecular weight of about 500.
Victawet 35B	Victor Chemical Works	$Na_6(octyl)_5(P_5O_{10})_2$ octyl=2-ethyl hexyl	Wetting Penetrant Dispersing	Paste	70%	anionic	Textiles, particularly vat dyeing. Non foaming.
Victawet 58B	Victor Chemical Works	$Na_6(capryl)_5(P_5O_{10})_2$	Wetting Penetrant Dispersing	Paste	70%	anionic	Penetrant, providing moderate foam.
Vultamol	Advance Solvents & Chemical Corp.		Dispersant	Powder			A dispersant for use in the rubber industry, in latex paints.
Warco A-246	Warwick Chemical Co.	Amine salt of an alcohol sulfate	Detergent	Liquid	35%		Liquid shampoo base. Liquid dishwashing compound.
Warco Amines 1, 2, 3	Warwick Chemical Co.	Higher fatty imidazolines	Detergent Penetrant	Paste	100%		Use: acid cleaners, anti-static agents.
Warcosan	Warwick Chemical Co.	Sulfated ester	Wetting	Liquid		anionic	Textiles; rewetting and finishing agent for sanforizing.
Warcosol NF	Warwick Chemical Co.	Sulfated ester	Wetting	Liquid		anionic	Textiles; dyeing with vat colors.
Warcosol 60 T	Warwick Chemical Co.	Alkyl naphthalene sod. sulfonate	Wetting	Liquid		anionic	Textiles—wetting and penetrating.
Warcosol Powder Conc.	Warwick Chemical Co.	Alkyl naphthalene sod. sulfonate	Wetting	Powder		anionic	Textiles; wool carbonizing.
Wetanol	Glyco Products Co.	Mod. sod. salt of sulfated fatty alcohol	Penetrating Wetting	Solid	45%	anionic	General purpose for creams, leather, paper, etc.
Wetsit	Jacques Wolf & Co.	Alkylated aromatic sulfonate	Wetting Penetrating	Liquid	65%	anionic	Textiles, paper.
Wetsyn	E. F. Drew & Co.	A secondary amide of lauric acid	Detergent Wetting	Liquid	30%	nonionic	Good lathering. Viscosity is maintained on dilution.
XL Synthetic Detergent	Armour & Co.	A built alkyl aryl sod. sulfonate	Detergent	Bead	26%	anionic	An all purpose detergent for domestic or industrial use. Density 18 lb. cu. ft. as packed.
Xylenesulfonate, Sod. salt	Wyandotte Chemicals Corp.	As named	Hydrotrope	Solid	95%	anionic	See Naxonate G. Also available in a 40% active solution. See Naxonate 4L.
Xynomine	Onyx Oil & Chem. Co.	Sulfonated fatty acid condensate	Detergent Wetting	Paste Powder		anionic	Textile processing. Household detergent. Also available in admixture with various builders as Xynomine BM Pdr., Xynomine Paste 33% conc., Xynomine Pdr. 91.

KLENZADE
KLENZADE
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X-4
LIQUID BACTERICIDE
A KLENZADE Product
KLENZADE PRODUCTS Inc
BELOIT WISCONSIN

JOHNSON'S
Beautiflor
TRAFFIC WAX
Cleans as it Waxes!
FOR WOOD AND
LINOLEUM FLOORS
MADE BY THE MAKERS OF JOHNSON'S WAX

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What's New?

Facing Page

Trademark of Klenzade Products, Inc., Beloit, Wis., now appears in blown in form on gallon bottles (upper left) used to package the company's liquid products. Bottle is made by Owens-Illinois Glass Co., Toledo, and comes in both amber and flint. Molded plastic closures are manufactured by Armstrong Cork Co., Lancaster, Pa., and labels are supplied by Rennel Lithographing Co., Rockford, Ill.

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"Beautiflor Traffic Wax" (upper right) is newest product of S. C. Johnson & Son, Inc., Racine, Wis. New wax provides water-free maintenance for wood, linoleum, cork and terrazzo floors. Available in one, five, 30 and 55 gallon package sizes, new "Beautiflor" wax may be used on plastic tile flooring, but not on rubber or asphalt tile.

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Yardley & Co., New York, have just announced a new modern-style light weight travel kit (lower left) for men. New "Flyweight" kit contains a tube of shaving cream, hair tonic, after shave lotion and powder. Unbreakable aluminum is used for bottles. Kit is dark blue, rough texture plastic fabric. Kit retails for $4.25 plus 47 cents federal tax.

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"Nexa" fumigating strips (lower right) are now available in America from American Nexa Corp., New York. Strips are treated with lindane to control flying insects in the home. Strips are folded, lighted and placed in an ashtray. Ten strips are packaged in sealed cellophane packet to retail for 25 cents. They are also available for sale under private label.

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This Page

Newest addition to the Procter & Gamble Co., Cincinnati, line is "Gleem" toothpaste, which is said to contain a new cleansing agent. The product is now being test marketed in Indianapolis, but won't be ready for national distribution for many months. P&G also makes "Teel," a liquid dentifrice.

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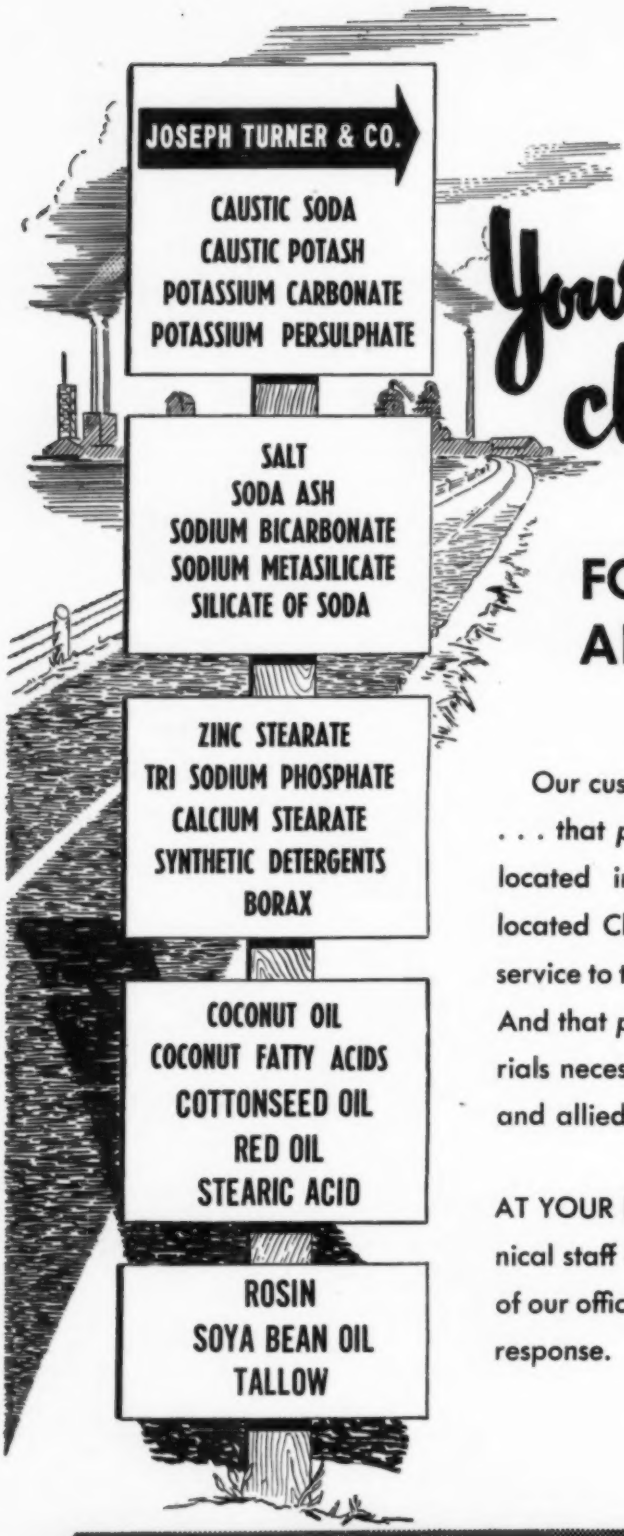
New aerosol shave product of J. B. Williams Co., Glastonbury, Conn., which is now being marketed nationally. The six-ounce container, furnished by Crown Can Co., Philadelphia, is being filled by Connecticut Chemical Research Corp., Bridgeport. Unit, which features red plastic cap, and white background with blue and red color scheme, will retail for 79 cents.

• • •

Mennen Co., Newark, N. J., has just announced its new aerosol shave product "Foam Shave," set for distribution nationally by mid-October. New Mennen product is packaged in red and green six and one-half ounce container to retail for 79 cents. It has new type release cap and spout, which snaps into locked position for traveling.



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FOR THE SOAP AND ALLIED INDUSTRIES

Our customers get a *plus* with every order . . . that *plus* is service facilitated by stocks located in strategic cities. Our centrally located Chicago office gives fast, complete service to the Midwest and West Coast areas. And that *plus* is in stocks of many raw materials necessary for the manufacture of soap and allied products.

AT YOUR DISPOSAL: Our experienced technical staff and facilities. Inquiries to any one of our offices will bring prompt and courteous response.

JOSEPH TURNER & CO

83 Exchange Place, Providence, R. I. RIDGEFIELD, NEW JERSEY 435 N. Michigan Ave., Chicago, Ill.

News

Yardley Builds in Canada

Yardley of London (Canada) Ltd., subsidiary of Yardley & Co., Ltd., London, England, recently started construction of a two-story brick structure on a fourteen and a half acres site in Toronto. The new building will cover a floor space of 70,000 square feet, and will house general offices, showrooms, and warehouse facilities upon its completion in mid-1953.

New Drackett Building

Drackett Co., Cincinnati, recently announced the groundbreaking for a $300,000 office building. The new three-story, 22,000 square feet structure replaces a frame building which has served as the firm's main office for the past 35 years, and which may be converted into a research laboratory. Drackett makes private label and brand name household cleaning products, among them "Drano" and "Windex".

Bright Joins Lever

Dr. Willard M. Bright, formerly director of the Theodore Clark Laboratory of Kendall Co., has been appointed assistant research director of Lever Brothers Co., New York, it was announced Sept. 30, by Dr. L. B. Parsons, research and development director. Dr. Bright is in charge of the chemical and physical research department.

Before joining Lever Brothers, Dr. Bright served continuously on the research staff of Kendall Co., starting in 1942 as a research chemist and holding a variety of research positions at both Kendall Co. and Bauer & Black, one of its divisions. He was assistant director of research at Bauer & Black from 1946 to 1948 and in 1948 was named director of the Theodore Clark Laboratory, where he specialized in research in physical chemistry.

Dr. Bright was graduated from the University of Toledo in 1936, receiving his M.S. from that school in 1937. In 1941 he received an A.M. degree from Harvard University and in 1942 a PhD. degree also from Harvard University. From 1938 to 1941 he served as a teaching fellow in general chemistry at Harvard. Earlier he had been a teaching fellow in chemistry at both the University of Toledo and the University of Pittsburgh.

WILLIAM M. BRIGHT

Dr. Bright is a member of the American Chemical Society, the American Association for Advancement of Science, the Chemist's Club, and Alpha Chi Sigma.

Time Chemicals Expands

Time Chemicals, Inc., Chicago, manufacturers of cleaning compounds and detergents, broke ground on Aug. 5 for a new plant to cost about $150,000. Located at 44th st. and Wolcott ave., in the Central Manufacturing District, the modern, one-story building will provide 23,000 sq. ft. of operating and office space, or approximately three times more than at the present Homan avenue quarters. The building is expected to be ready for occupancy in December. About half a million pounds of cleaning compounds, are produced a month, mostly under private label, and some packaging is also done by the firm. Partners in the enterprise are Seymour Baskin and Irving Bell.

"Dial" Soap Contest

Armour & Co., Chicago, recently announced a citizenship contest for its "Dial" soap. The consumer simply writes an answer of 25 words on his choice for President. He can send in as many answers as he likes, providing each comes with a wrapper from "Dial" soap. Large cash prizes are given.

Gilman Joins Durstine

John R. Gilman was appointed vice-president of Roy S. Durstine, Inc., advertising Agency, New York, it was announced recently. Mr. Gilman's previous associations include three years as vice-president of Colgate-Palmolive-Peet Co., Jersey City, N. J., and 30 years with Lever Brothers at Cambridge, Mass. With Lever he was for many years a director and vice-president in charge of advertising. Among numerous other products he was responsible for "Lux" and "Lux" toilet soap.

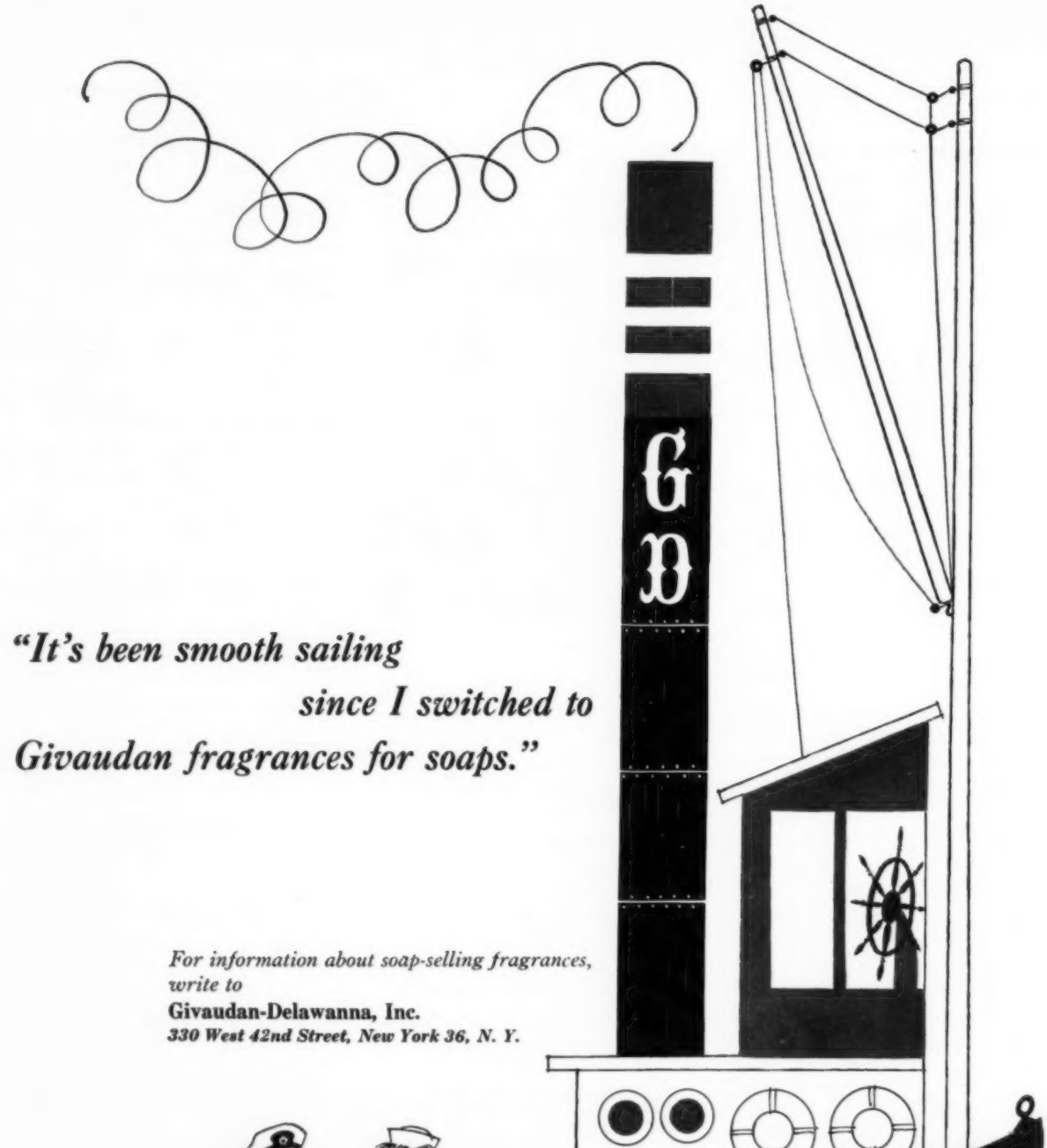
Cudahy Expands in Canada

Cudahy Packing Co. recently announced its removal to a new and larger plant at Clayson Road, Weston, Ontario. The new plant is a brick building covering 31,000 square feet.

Detrex Advances Two

L. Camel has been advanced to the position of divisional general sales manager of the industrial chemical division, and D. E. Willard to the post of divisional general sales manager of the industrial equipment division, it was announced recently by Detrex Corp., Detroit.

Mr. Camel directs sale and service of emulsions and alkali cleaners, strippers and spray booth compounds, silicone coating removal processes and cleaning compounds for the food processing division, etc. Mr. Willard controls sale and service of solvent degreasing machines and solvents, and mechanical washers used in industrial production cleaning.



"It's been smooth sailing since I switched to Givaudan fragrances for soaps."

For information about soap-selling fragrances, write to
Givaudan-Delawanna, Inc.
330 West 42nd Street, New York 36, N. Y.

Snell Predicts Detergent Output

PRODUCTION of synthetic detergents will reach the two billion pound mark in 1955 and continue to 2½ billion pounds by about 1960, Foster D. Snell, head of the New York research organization bearing his name, predicted in an address during the 7th National Chemical Exposition in Chicago recently. Syndets will have over one-half the household market this year, he added, and will probably capture over half the total market within the next ten years. "There is every reason to believe," he asserted, "that this prediction is a plausible one."

Dr. Snell was one of six speakers on a symposium devoted to a survey of the chemical prospects for the next decade. All six were agreed that, while many other industries may be concerned about their future, the chemical industry can confidently expect decades of continuing growth and broadening opportunity.

Examining the "revolution" resulting from the introduction of syndets, Dr. Snell pointed out that, while they have taken away half the soap market since 1940, they have opened up new markets and created opportunity for animal and vegetable fats and oils. Resulting, too, from the change, he said, has been the establishment of a synthetic glycerine industry to replace the glycerine lost in decreased soap manufacture, while dozens of new processes and products for making synthetics have come into being.

In order to produce a billion pounds of syndets in place of a billion pounds of soap, he continued, the chemical industry has had to increase its capacity for producing caustic soda by a third of a billion pounds annually, while sulfuric acid production capacity has had to be increased, roughly, by another third of a billion pounds.

"There is a world shortage of sulfur," he said, "and about 100 million pounds of that is due to the increased sulfur requirements for syndets. One substantial plant for producing syndets in England has been built but is not operating because they cannot get an allocation for sulfuric acid." The shortage of production capacity for inorganic chemicals, such as polyphosphates, he also stated, is still the limiting factor on quantity and performance quality of syndets abroad.

In two statements he summarized the outstanding realities of the "revolution" as follows:

(1) "Nearly one pound of fat formerly required to make one pound of soap is replaced by 1/3 pound each of caustic soda or other equivalent alkali; 1/3 pound of sulfuric acid; and about ⅛ pound of alkylate and nearly that amount of cocoanut oil.

(2) "A major part of the raw material supply of the detergent industry, as it shifts from soap to syndets, is transferred from the fat industry to the heavy chemical and petroleum industries. (The latter produce the alkylate.) These are the things that are fundamental to the changes in this billion dollar industry."

Examining other effects of the changes, Dr. Snell pointed out that the consumer is "confused" and doesn't know the difference between soap and syndets, except that one brand gives a better wash in hard water than does another. "The consumer," he emphasized, "thinks in terms of brands, not chemical formulas."

Wholesalers and retailers don't care, either, he said, since cost and selling price of a case of soaps or syndets is roughly the same to them. "They literally are not affected to any appreciable extent," he said. "But, of course, if the product does not perform as advertised, the housewife would not continue to buy it."

As to the effect of the change on equipment manufacturers, Dr. Snell said: "I have heard the statement that the last soap kettle has been installed in this country. This is absurd on its face, if we look a century ahead. One factor is population growth, currently at 1.3 percent a year, which will double our population in 80 years, if this factor does not change."

"Considering how long a soap kettle lasts, there will be few installed for some decades, particularly as other soap processes are rendering some of the old type of soap making capacity obsolete. But, in place of soap kettles, equipment manufacturers are producing sulfonators, slurry tanks, spray towers, et cetera."

Turning to consideration of the effect of the change to syndets on the fat industry, Dr. Snell quoted an editorial from *Soap and Sanitary Chemicals* which placed responsibility for the troubles of the fats industry on its own failure to do research. He pointed out that the post-war fat shortage is over and that other uses for fats must be found through chemical research. He cited examples of how research has already produced valuable products from fats which are in commercial production, but emphasized that "Commercial exploitation depends on creating the demand and then balancing the cost of production against this demand." In well under ten years, he pointed out, the soap industry has lost half its market, thereby forcing the fats to look for other markets. "They will be found," he asserted, "but where remains to be seen."

While the U. S. leads in com-

Lentheric Elects Gage

Charles S. Gage, formerly vice-president of Lentheric, Inc., New York, has been elected president, it was announced recently. In addition to his duties as president of Lentheric, he continues as vice-president and director of purchases of E. R. Squibb & Sons, New York.

CHARLES S. GAGE

The Maya Line

provides character and continuity to an entire line of products

Stable, economical and versatile, the Mayas are invaluable in maintaining a given fragrance throughout a line of related products such as a cream, cologne, powder, rouge, soap, etc.

The Mayas include such favorites as our Maya Fougere 4650 and our Maya Millefleurs 4707, a variety of fine Parisian bouquets, and a full line of fresh floral odors.

Write us about your products and we will be glad to offer suggestions and further details.

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mercial syndet production, Dr. Snell said, the rest of the world is following. He mentioned England, Japan, Uruguay, Israel, as a few of the countries where syndets are being made, adding that plants are springing up in all civilized countries.

"The petroleum industry," he continued, "now has an international market for a new product—alkylate—and the chemical industry has new markets for many of its old products, such as alkali and sulfuric acid, plus much demand for polyphosphates—a material for which production capacity has multiplied in ten years.

"And, at the end of the chain, the consumer buys a package with a different label, perhaps a different color, relying on us, the chemists and chemical engineers, to provide increased production that will serve her better."

Boston BIMS End Season

The final golf tournament of 1952 of Bims of Boston was held September 16 at the Nashua, N. H., country club. Golf prizes were won by R. P. Cupit of Dewey & Almy Chemical Co., Arthur B. Morganstern of Verney Corp., H. C. Milton of American Cyanamid Co., James A. Farley of Commercial Solvents Corp., Charles T. Hoye of Rexall Drug Co., and E. W. Norton of United-Carr Fastener Corp. E. C. Richardson of U.S. Industrial Chemicals won the prize for the most unusual golf shot.

Winners of door prizes were A. A. Lawrence of Dow Chemical Co., Gerald D'Amico of Fritzsche Bros., and Joseph J. Flanagan of Potter Drug & Chemical Corp.

Rhinelander Names Two

Rhinelander Paper Co., Rhinelander, Wis., recently announced appointment of two sales representatives. Elmer J. Stoltz becomes sales representative in the Cleveland area. He has been with the Rhinelander sales force since 1950, having joined the firm in 1948. Paul G. Lee was named sales representative for the southwestern territory with headquarters in Dallas. Mr. Lee has been with the company since 1950.

C-P-P Opens in Mexico

Colgate-Palmolive-Peet, S.A., recently inaugurated its new plant in Mexico City, where it will manufacture "Fab", heavy duty detergent. The plant is said to be the most modern and the largest detergent producing unit in Latin America.

Soap Flakes Lower

The price of soap flakes has been reduced 21 cents per case by major producers in Canada, it was announced recently. Lower tallow prices are said to be the chief factor in reducing manufacturing costs.

More Fatty Acid Made

Fatty acid production in August totaled 29,562,000 pounds compared with 23,000,000 pounds made in July, according to a recent report by Association of American Soap and Glycerine Producers. Stocks at the end of August totaled 42,993,000 pounds, about two million pounds above the July level.

Form New Soap Firm

Incorporation of Multiple Soaps, a corporation with a capital of $100,000, was announced recently. Directors of the firm, which has completed plans for the construction of a $50,000 factory in the Fresno, Calif., area, are: Roy W. Peterson, Helen Peterson, C. Cal. Evans, Frank W. McGugin and W. A. McGugin. Frank McGugin is chemist in charge of operations at the experimental plant at Hammer Field, Fresno. Completion of the new plant is scheduled before the end of the year. It will make bar and powdered soap. Manufacture of softeners, bleaches, deodorants, germicides, and insecticides is planned for the future.

LLOYD I. VOLCKENING

DCAT Elects Officers

The 62nd annual meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade was held September 25-27 at Pocono Manor Inn, Pocono Manor, Pa. Lloyd I. Volckening, Ivers-Lee Co., New York, was elected president. Other officers who will serve during the next fiscal year are: Stanley I. Clark, Sterling Drug, Inc., vice-chairman; Hugh S. Crosson, McKesson & Robbins, Inc., treasurer, re-elected; Helen L. Booth, secretary, re-elected; James G. Flanagan, S. B. Penick & Co., counsel, reappointed. Charles M. Macauley, retiring chairman, was elected section representative to the board of directors of the New York Board of Trade.

New "Carbose" Plant

Facilities for commercial production of new specialized grades of "Carbose" sodium carboxymethylcellulose have been announced recently by Wyandotte Chemicals Corp., Wyandotte, Mich. Increased detergency promotion and greater whiteness retention are among the advantages claimed for the new grades.

Curtis in New Position

Francis J. Curtis, vice-president and director of Monsanto Chemical Co., St. Louis, Mo., has transferred to the company's headquarters, it was announced recently. He now devotes full time to handling special assignments for President Charles Allen Thomas, and reports directly to the president. His duties as director of Monsanto's industrial preparedness at Washington are assumed by Edward W. Gamble, Jr., who has been in charge of the firm's Washington office since 1951. Philip R. Tarr, assistant to the president, becomes secretary of the company's executive committee as well as of the finance committee, positions held by Mr. Curtis since 1943.

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FIELD-TESTED LABORATORY APPROVED PRODUCTS
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We invite your inquiries for full details, samples and prices on any of these products. Sold in bulk or under your own private label and backed by over a third of a century's manufacturing experience.
For chemical specialties not listed above, contact our private formula division.
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Auspitz Speaks

The Chicago chapter of Society of Cosmetic Chemists heard Irving D. Auspitz, executive vice-president of Weiss Geller, Chicago, at its October 14 meeting which was held at Henrici's restaurant, Merchandise Mart, Chicago. Mr. Auspitz spoke on the question: "Can cosmetic chemists catch up with advertising claims?"

Heyden Shifts Executives

John P. Remensnyder has been elected chairman of the board and Simon Askin has been elected president according to a recent announcement by Heyden Chemical Corp., New York. Barrett Brown, partner of R. W. Pressprich & Co., becomes a director in place of Dr. Donald B. Keyes, who has resigned.

Mr. Remensnyder, who has been associated with Heyden for the past 32 years, became president in 1950, and served as vice-president and director from 1944 to 1950. Mr. Askin, who joined Heyden in 1943, has served since 1948 as vice-president in charge of industrial relations and purchasing, and as a director of Heyden.

Offers New Syndets

Emulsol Corp., Chicago, recently announced publication of technical bulletin 33, describing "Emcol 4100" series of fatty amide sulfonate foamers and detergents. These products are recommended for use in liquid dishwashing compounds, shampoos, and bubble baths.

Names L.A. Agent

Robinson-Wagner Co., New York, recently announced appointment of McNerney Chemical Co., Los Angeles, as its sales representative in that region. The appointment became effective September 1.

New Steel Pail Plant

Gordon D. Zuck, president, recently announced the organization of Vulcan Steel Container Co., for the manufacture of steel pails in sizes from one to 12 gallons and the establishment of a new, modern plant in Birmingham, Ala. This new plant was specially built and equipped solely for the manufacture of steel shipping containers. Complete warehouse stocks are maintained of all trade sizes. Hi-

GORDON D. ZUCK

bake linings which meet the requirements of a wide diversity of chemical products are also available.

Mr. Zuck has been associated with the steel shipping container industry for the past 19 years. He served on the Steel Shipping Container Industry Advisory Committe of N.P.A. and has been active in a number of national associations devoted to the development of container specifications and their wider application to shipping needs and requirements.

New Geerpres Bulletin

A two-page bulletin and jobbers' catalog insert (No. 251-2) describing its complete line of floor cleaning equipment is now available from Geerpres Wringer, Inc., P.O. Box 658, Muskegon, Michigan. Included in the bulletin are illustrations and specifications for three sizes of mop wringers, three sizes of single tank outfits consisting of a mop wringer and galvanized tank mounted on a castered aluminum chassis, and two sizes of twin tank units having a single wringer and twin galvanized tanks on a castered electroplated angle iron chassis.

Also included are specifications and illustrations of various sizes of galvanized tanks and buckets, rubber castered chassis, mopsticks and a mop-stick and broom holder. Design features of the wringers and castered chassis are described and illustrated.

SAACI Xmas Party

The annual Christmas Party of the Salesmen's Association of the American Chemical Industry will be held at the Waldorf-Astoria Hotel, New York, Wednesday, Dec. 10. Program for the affair, which will be held for the first time in the grand ballroom of the Waldorf, will feature dinner, a show, and drawings for various prizes.

New Soap Concentrate

"Driway", a powdered soap concentrate, said to result in liquid soap ready for use when added to and stirred with ordinary cold tap water, was announced recently by Kamen Soap Products Co., New York. The product is sold in fiber drums containing enough to make ten drums of liquid scrub soap, packed in bags containing the proper quantity to make one 55 gallon drum full of soap. Economies in freight charges, labor, and storage space are effected by the use of "Driway", according to its manufacturer.

LeKashman in New Post

R. M. Hollingshead Corp., Camden, N. J., recently announced appointment of Raymond LeKashman as manager of its automotive division, to succeed L. M. Olson, who left the corporation. For the past thirteen years Mr. LeKashman has been associated with R. H. Macy & Co., New York, in various executive merchandising posts.

CSMA Luncheons Set

In addition to a luncheon meeting held October 15, for which E. D. Ingalls of Hoffman-LaRoche, Inc., Nutley, N. J., is the guest speaker, the Chemical Specialties Manufacturers Association has announced a similar luncheon will be held on Nov. 19. Both luncheons will be held at the Hotel Roosevelt. Mr. Ingalls is to discuss "Sanitation in Pharmaceutical Plants". The name of the speaker for the November luncheon has not been announced as yet. There will be no luncheon in December, because of the annual meeting being held in New York, Dec. 7-8-9.

ARE YOU STILL SEEKING A BETTER ODOR FOR YOUR

DETERGENT?

IF SO, you can end your search HERE!
Now that may sound smugly overconfident,
but let us explain . . .
The development of an odor
satisfying to a customer's specifications
as to fragrance and price
presents no great problem to the supplier
if he can meet two basic needs:
First, he must have a staff so capable and experienced
that it can cope with *any* perfume problem
the product might present.
Second, his organization should be so geared
to the purchase and control of raw materials
that the best in quality and price
can be constantly assured.
It is because our organization
does fulfill these conditions that we feel
we can be of helpful assistance
to the soap or detergent manufacturer
whose ideas of fragrance, quality and price
have not yet been fully satisfied.

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HOUSEHOLD SPRAYS
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Warner-Hudnut to Build

Construction of a new plant at Morris Plains, N. J., was announced recently by Warner-Hudnut, Inc., New York. The new plant will be situated on a forty-eight acre plot, adjoining present manufacturing laboratories built five years ago by Chilcott Laboratories, Inc., which was acquired last year by Warner-Hudnut as a subsidiary company. The plant, which will add 130,000 feet of production space, is scheduled for completion in October 1953.

Fatty Acid Output Drops

June figures for the fatty acid industry show a slight drop in production from May levels, according to a recent report by Association of American Soap & Glycerine Producers. Production in June totalled 32,131,000 pounds as against 32,978,000 pounds in May. Consumption of saturated acids showed the same trend, the June figure being 13,009,000 pounds, as against 15,205,000 pounds in May. Total shipments of unsaturated acids in June were 17,557,000 pounds, a gain over May's figure of 16,806,000 pounds. Total shipments in both categories were 30,566,000 pounds. Stocks of fatty acids rose about three per cent during the month of June, largely in the saturated acid category. The end-of-month total was 43,271,000 pounds.

Hathorne Joins Glyco

Glyco Products Co., Brooklyn, N. Y., recently announced appointment of B. L. Hathorne as assistant to the vice-president in charge of development. Mr. Hathorne, who is a graduate of Lowell Institute of Textile Technology, resigned recently as manager of the auxiliary products division of Geigy Co., New York, prior to which he was a consultant to the textile industry.

Wyandotte Advances Three

Appointments of H. F. Roderick as director of sales, of M. E. Clark as general manager—products sales, and of M. A. Thompson as general manager—field sales were announced recently by Michigan Alkali Division, Wyandotte Chemicals Corp., Wyandotte, Mich. The changes became effective October 1.

As director of sales Mr. Roderick continues to administer sales and technical service activities of Michigan Alkali division. Formerly director of research activities, he has been with Wyandotte for over 21 years.

Mr. Clark's new duties include coordination of sales plans and programs, and liaison between manufacturing and sales. He will also collaborate in promotional activities in support of direct selling efforts by the field organization. Mr. Clark, who has been with Wyandotte for over 11 years was recently manager of alkali and chlorine sales.

Mr. Thompson will assume his new duties January 1, and until then he will continue to make his headquarters in Chicago. In his new post he will coordinate activities of the district offices and field representatives. With the general manager—product sales, he will develop sales plans and programs for eventual implementation by the field sales group. Mr. Thompson was formerly branch manager of the Chicago territory.

H. F. RODERICK

M. E. CLARK

M. A. THOMPSON

Swift Lets Contract

Blaw-Knox Construction Co., Pittsburgh, recently received a contract from Swift & Co., Chicago, to modernize and expand the latter's soybean processing facilities at Fostoria, O. Under the contract, Blaw-Knox chemical plants division designs, equips, and constructs modern solvent extraction facilities, including "Rotocel" extractor and related auxiliaries. The plant, which will be able to process 200 tons of beans per day, is expected to be in operation by early 1953.

Indian Soap Standards

Specifications for toilet soaps and laundry soaps were published recently by Indian Standards Institution. In formulating requirements for laundry soap economic use of raw materials, low purchasing power of the bulk of the population, and the existence of many small-scale manufacturers whose products could not be expected to conform to standards of high quality, have been taken into consideration. As a result four grades have been prescribed for this soap: grade I, pure soap; grade II, soap containing builders, such as soda ash, sodium silicate, etc.; grade III, soap containing fillers besides builders; grade IV, soap manufactured chiefly from soap-stock obtained in hydrogenated oil factories in the process of refining oils.

Hooker Opens New Office

Hooker Electrochemicals Co., Niagara Falls, N. Y., recently announced the opening of a new sales office in Chicago. Charles Y. Cain, Hooker's sales representative in the Chicago area since 1945, has been named district sales manager, and Donald McKechnie who has been in the firm's main office for several years, is now Chicago office manager.

Tamms Advances O'Brien

Appointment of T. J. O'Brien as chief purchasing agent of Tamms Industries, Inc., Chicago, was announced recently. He had been assistant purchasing agent of the company for the past seven years.

ANOTHER BUCKEYE FIRST!

"GERMELIM"

A Concentrated Soap and Cleaner With the Amazing Phenol Coefficient of 3.5!

Most floor surfaces harbor an amazing number of both harmful and harmless bacteria invisible to the naked eye—presenting health hazards which should never be overlooked.

GERMELIM, in a single operation, cleans, deodorizes and destroys a large percentage of these dangerous germs—leaving floors spotlessly clean and with an extremely low bacteria count.

Clean, disinfect and deodorize floors in a single, thorough operation with Buckeye GERMELIM — latest development of the Davies-Young laboratories. GERMELIM is a concentrated soap and cleaner combination with the amazing phenol coefficient of 3.5. It cleans floors quickly and efficiently — rinses freely. Diluted with water in a 30 to 1 solution, it *destroys* dangerous floor bacteria on contact leaving a clean, lasting odor.

GERMELIM is as easy to use as ordinary floor cleaners, and is equally effective on floor surfaces of every type. You simply prepare a 30 to 1 scrubbing solution with GERMELIM and apply. When savings in time, money and effort are important . . . when low bacteria count is desirable . . . clean with GERMELIM. A free test sample with complete instructions for use is yours for the asking. Use the coupon below.

Another Great Product of
The Davies-Young Soap Company
Dayton 1, Ohio

AVAILABLE IN 55, 30, 15, 5 AND 1 GALLON CONTAINERS

THE DAVIES-YOUNG SOAP COMPANY SSC 10-52
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Please send free sample of GERMELIM and full instructions for its use.

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Herring Maas Sales Head

The appointment of Chester R. Herring as sales manager of the A. R. Maas Chemical Division, to fill the

C. R. HERRING

vacancy caused by the recent death of Hal E. Noeck, was announced recently by Roy L. Geiler, president of A. R. Maas Chemical Company, Division of Victor Chemical Works, South Gate, Calif. Mr. Herring has been with the Victor Chemical Works for the past eight years. The last two years he has been in charge of the Kansas City sales office; and, previously, he was in charge of sales of sodium phosphates in the Chicago office. He has had experience in sales with one of the large soap companies and also was production superintendent for one of the knitting mills in North Carolina previous to this.

Citizenship for Peyer

Robert C. Peyer, controller of Procter & Gamble Co., in Puerto Rico, a native of Switzerland, recently took the oath of United States citizenship on a hospital bed in San Juan. He is suffering from a heart attack. Mr. Peyer won the United States Army's Medal of Freedom for "meritorious service which aided the United States in the prosecution of war against Japan."

During the war he was treasurer of the Philippine Manufacturing Co. in Manila, and was not interned because of his Swiss birth. He was able secretly to provide food, clothing and money to American prisoners in Santo Tomas camp. He also helped guerrilla forces in the Philippines.

Sterling Names Ziegler

Appointment of Herbert F. Ziegler, Jr., as manager of the Kansas City, Mo., district office of Sterling Electric Motors, Inc., Los Angeles, has been announced recently. Mr. Ziegler is a graduate of the University of Notre Dame. After service in World War II as lieutenant j.g. in the Navy, he took post-graduate work at the University of Friborg in Switzerland. Since then he has been engaged in various branches of industrial selling.

New Heyden Exec. Offices

Heyden Chemical Corp. recently moved its executive offices from 393 Seventh Ave., New York, to 342 Madison Ave., where it occupies the entire 16th floor of the Canadian Pacific Building.

Olson Joins MM&R

Magnus, Mabee and Reynard, Inc., New York, recently announced appointment of Harold A. Olson to its Chicago sales staff. Mr. Olson serves in the mid-western territory under A. R. Jensen, general manager of the firm's Chicago office.

Detergents Change Laundering Habits

UP TO date information on consumer habits regarding home laundering is revealed in a housecleaning survey made recently by Home Makers Guild of America for Owens-Illinois Glass Co., Toledo, O. The study reveals changes in laundering habits by the development of new detergents and the automatic washer. Results are based on questionnaires sent to homemaker consultants in various income groups throughout the country.

More than six out of ten families report that they use detergents of some kind, either granules, powder, or flakes; 47.9 percent use soap powder; 9.4 percent use bar soap; and 9.1 percent use soap flakes. Fifty-seven percent of the consultants report that they use dry detergents for washing dishes, 31.9 percent use a soap in either flake or powder form; 23.1 percent say they use liquid detergents, and ten percent use bar soap.

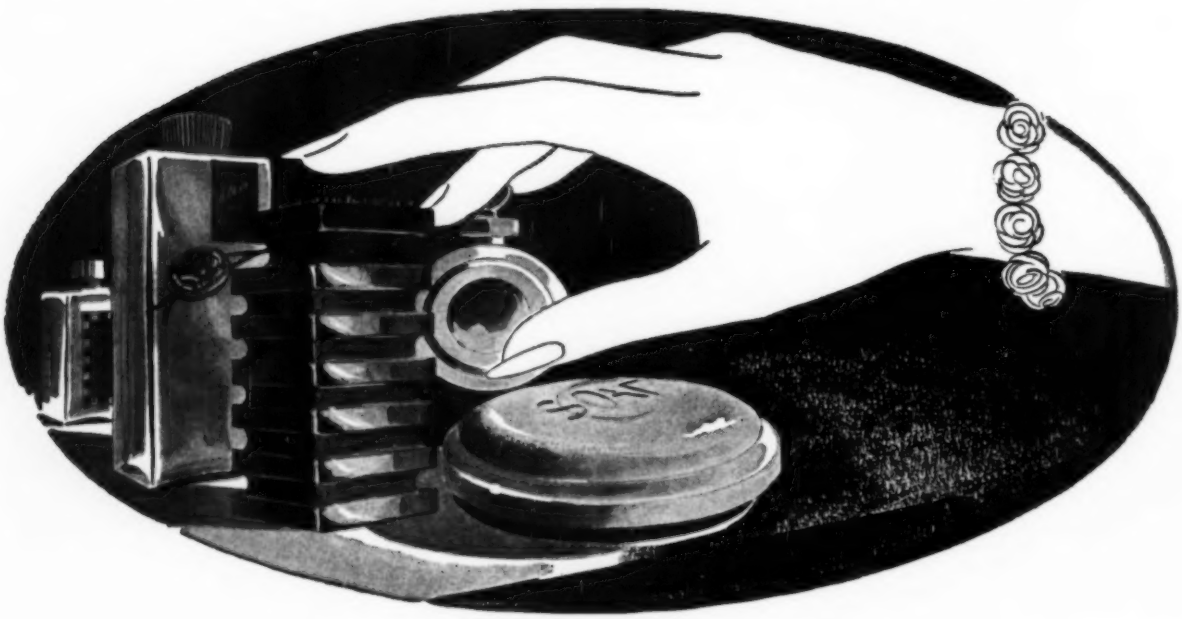
More than 90 percent of the consultants report that they use bleach for some part of their laundry. A total of 83 brands were mentioned with the survey showing a slight increase in families using bleach in comparison with the 1946 survey. Of the women who use automatic washers, 87.4 percent use a liquid bleach in their wash; 69.5 percent use the bleach in the washing suds; 33.1 percent in the soaking water, and 5.8 percent in the rinse water. In laundering clothes, 55.6 percent of the consultants consider the disinfecting qualities of bleach important. More than half of the homemakers participating in the survey state that they use bluing.

Four out of five consultants indicate that they use ammonia in laundering and mentioned 81 brands. Sixty percent of these women who use ammonia use the clear product without suds. More than half of the ammonia users prefer the quart size. The oval shaped ammonia bottle is first in preference with a stippled or rough surface.

More than three-fourths of the consultants state that they do all their laundry at home, 19 percent send part of their laundry to a commercial laundry; 4 percent take part of their laundry to a neighborhood automatic laundry service; one percent take all to a neighborhood automatic laundry service and less than one percent send all their laundry to a commercial laundry. Results of this survey are based on the 702 housewives who represent the women who do all their laundry at home.

There has been an increase of 11 percent in the number of housewives doing their laundry at home based on comparative figures of a laundering survey conducted in 1946 by the Home Makers Guild. Slightly more than 31 percent of the homemakers doing all their laundry at home report that they use an automatic washer. This figure represents individually-owned washers as well as automatic washers located in apartment buildings for use of tenants.

MAKE CONSUMER ACCEPTANCE A "SURE THING"



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There's a *profit reason* why the nation's leading producers of soaps, cosmetics and toiletries rely on VERONA as a primary source of aromatic chemicals and specialties. These leaders know that they can always bank on VERONA for the stable, high quality raw materials that *best assure* acceptance of their products at the POINT OF SALE — *proving ground of quality!*

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VERONA **AROMATICS DIVISION**

VERONA CHEMICAL COMPANY • NEWARK, NEW JERSEY

DISCOVER FOR YOURSELF THE MANY ADVANTAGES OF NYTRON

TRADE-MARK REG. U. S. PAT. OFF.

No Other Wetting Agent-Detergent Matches its Superior Performance

It's the unique combination of properties that makes NYTRON so effective. When used alone—or in combination with phosphates, silicates, acids, soaps, caustic soda, soda ash and similar materials—NYTRON provides faster wetting...better penetration...more thorough rinsing...improved detergency.

Examine the properties of NYTRON one by one, then you will see how they team up to form a combination unmatched by any other wetting agent-detergent.

Exceptional Detergency: Whether used in hard or soft, hot or cold water, NYTRON is effective for removing a wide variety of soils from fabrics, surfaces and metal parts. It retains its detergent action when used in either acid or alkaline mediums.

Faster Wetting: NYTRON, used alone or with other materials, reduces wetting time and penetration to a matter of seconds.

Counteracts Hard Water: NYTRON completely eliminates hard water difficulties. And it is economical because increased quantities do not have to be added to compensate for water hardness. NYTRON prevents the formation of scum, grease rings, streaks, spots.

Rapid, Thorough Rinsing: In hot, cool or even cold water, NYTRON rinses quickly and thoroughly. It does not leave an insoluble deposit.

Chemically Stable: NYTRON is remarkably stable in acid or alkaline solutions, over a wide range of temperatures and concentrations.

Highly and Rapidly Soluble: NYTRON has a unique solubility range. It goes into solution almost instantly in hot or cold water and will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts.

Excellent Emulsifying Power: NYTRON easily removes oil, fat and grease from surfaces, metal parts, fabrics.

Foaming: NYTRON foams in any normal concentration of acid or alkali, in distilled water or sea water, in ice cold or boiling water.

Prove to yourself that the exclusive combination of properties of NYTRON makes it a truly superior and economical wetting agent-detergent. Try NYTRON...and see the difference. For complete information, write to the address below on your business letterhead.

Nitrogen Division
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Sales and service on NYTRON, formerly handled by Solvay Sales Division, are now handled by Nitrogen Division, Allied Chemical & Dye Corporation.

Antara Chemicals Aid Business

SURFACTANTS

(DETERGENTS, EMULSIFIERS, WETTING AGENTS, DISPERSANTS)

BIOCIDES — Antara Surfactants are designed for use in the formulation of insecticides, fungicides and herbicides.

DISHWASHING — Antara IGEPAL Surfactants are among the foremost synthetic detergents for all kinds of household uses.

SPECIALTY COMPOUNDING — From laundering compounds to window cleaners, Antara Surfactants serve the specialty field.

DAIRY CLEANING — Cleaner-sanitizers, bottle washers, wall and floor cleaners can be tailor-made from Antara Surfactants.

TEXTILE PROCESSING — IGEPONS and IGEPALS are used in almost every phase of textile processing from scouring to finishing.

METAL PROCESSING — Antara cationics, nonionics and anionics are used in a wide range of metal processes including cutting, grinding, pickling, plating and degreasing.

HOW ANTARA CHEMICALS CAN HELP YOU

Antara operates this way:

a technically trained sales force develops improved processes and end products by working intimately with you on your surfactant problems.

Antara's sales force does much more than sell:

- It advises.
- It trouble-shoots.
- It helps business in general by helping you in particular.

Illustrated here are only a few of the uses for Antara surfactants. Consult us on these and others. Chances are, we have a product that will do a better job for you.

gdc ANTARA gaf

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DIVISION OF

GENERAL DYESTUFF CORPORATION

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BRANCHES: Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco

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Filtrol*

1st choice

with animal fat and oil processors

FACTS EVERY ANIMAL FAT AND OIL PROCESSOR SHOULD KNOW:

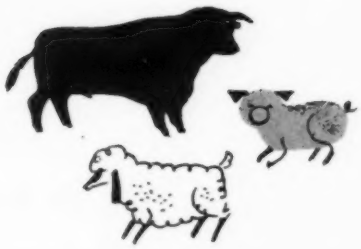
1. Special Filtrol's unexcelled decolorizing power makes it the best adsorbent for meeting the exacting color specifications of the trade.

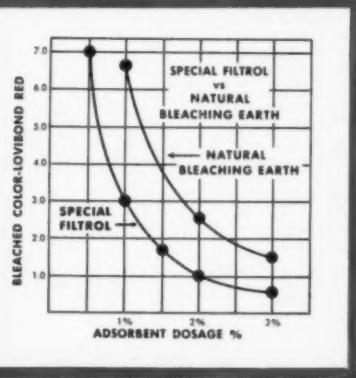
2. Special Filtrol has the lowest oil retention and the fastest filtration rate of any activated adsorbent.

3. Special Filtrol produces excellent color stability.

4. Special Filtrol is the standard activated adsorbent of the American Oil Chemists' Society.

5. Filtrol Corporation offers complete laboratory facilities and trained technicians to assist fat and oil processors with their decolorizing problems.





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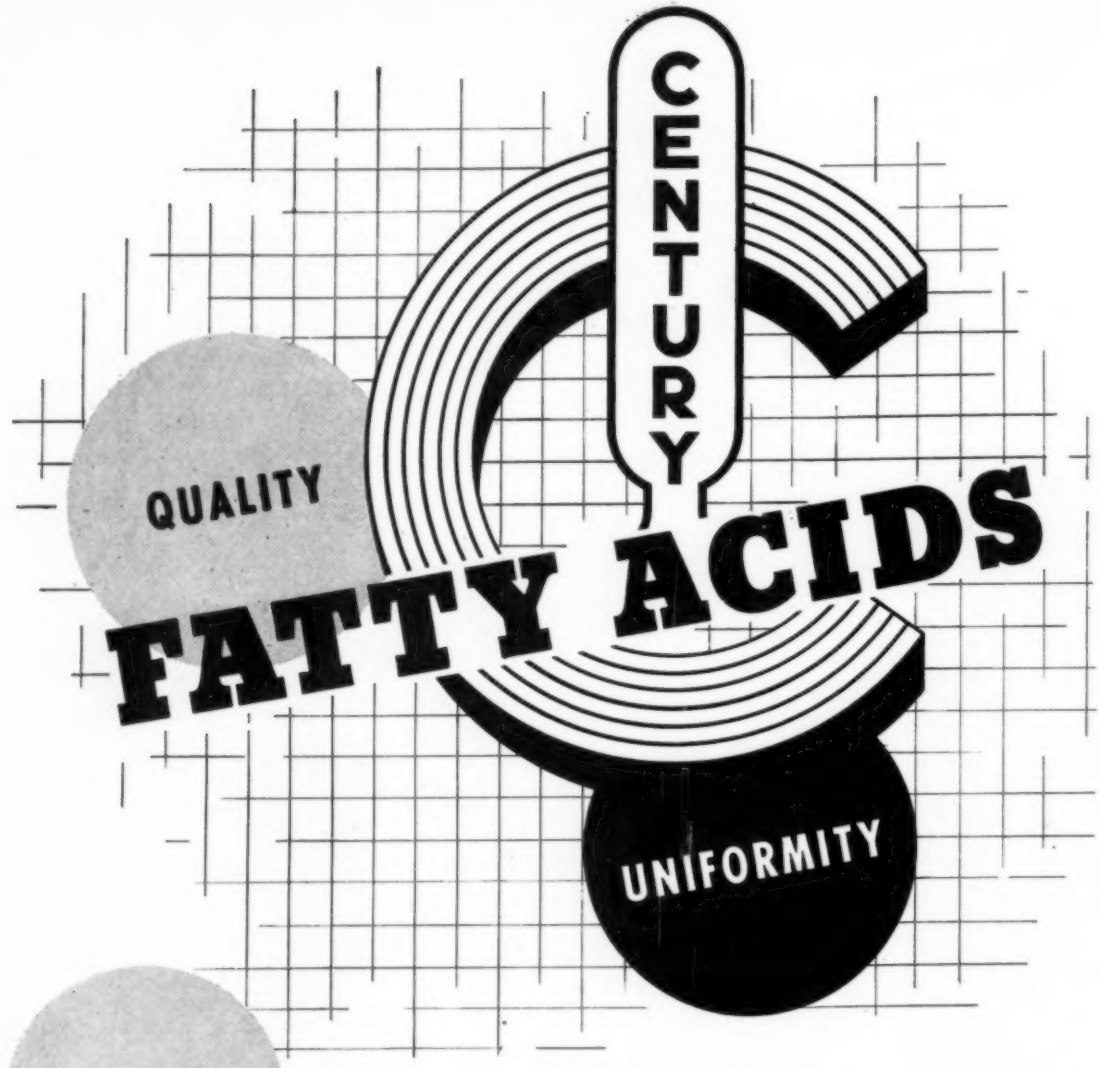

CENTURY OLEIC ACID—A grade to match your needs—from regular Red Oil to low titer White Oleic—Century Oleic is the standard of the industry because of its high quality and uniformity.

CENTURY 1425
Distilled Corn Oil Fatty Acid

A relatively low titer material particularly interesting in the manufacture of clear liquid and paste soaps.

CENTURY 1435
Distilled Cottonseed Fatty Acid

Where a higher titer, uniform quality fatty acid is desired, Century 1435 finds wide usage.

CENTURY 1445
Distilled Soybean Fatty Acid

A medium titer vegetable fatty acid of good stability, used extensively in specialty soaps.

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Stearic Acid **Animal Fatty Acids**
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Plant: Dover, Ohio
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Bids and AWARDS

Alkaline Cleaner Award

Pennsylvania Salt Manufacturing Co., Philadelphia, won the award on 340,000 pounds of alkaline cleaner, class A, with a bid of 7.32 cents per pound in a recent opening for miscellaneous supplies by Army Ordnance Department, Frankford Arsenal, Philadelphia.

FSS Floor Wax Bid

A recent opening for miscellaneous supplies by Federal Supplies Service, New York, included floor wax, paste, 3,100 four-pound cans (item 1) and liquid, 1,160 one-gallon cans (item 2). Lowest bidders were Twin City Shellac Co., Brooklyn, N. Y., item 1, 21 cents; and American Wax Co., College Point, N. Y., item 2, 63 cents.

Metal Cleaner Award

Turco Products, Oklahoma City, won the award on 3,000 gallons of metal cleaner in a recent opening for miscellaneous supplies by U. S. Air Force, Tinker Base, Okla., with a bid of $1.48.

Army Insecticide Bid

Low bid on 12,000 pounds of DDT, which was part of a recent opening for miscellaneous supplies by Army Engineers, Norfolk, Va., was submitted by General Chemical Division, Allied Chemical & Dye Corp., New York, with 35 cents.

FSS Soap Awards

Soap and scouring powder were included in a recent opening for miscellaneous supplies by Federal Supply Service, Washington, D. C. The following firms won awards: Imperial Products Co., Philadelphia, on 1,800 pounds of soap powder, 3.65 cents per pound; Day & Frick, Philadelphia, on 21,000 pounds of grit soap, 5.78 cents per pound; Sterling Supply Corp., Philadelphia, on 30,000 pounds of laundry soap, 7.42 cents per pound; and Stahl Soap Corp., Brooklyn, N. Y., on 14,175 pounds of toilet soap, 15.87 cents per pound. Another opening by the same agency included 42,000 pounds of soap, for which Standard Soap Co., Camden, N. J., won the award with a bid of 5.15 cents per pound.

FSS Polish Award

The award on 2,460 quarts of furniture polish in a recent opening for miscellaneous supplies by Federal Supply Service, Washington, D. C., went to Virginia Specialty Corp., Lynchburg, Va., with a bid of 15.5 cents per quart.

Navy Disinfectant Bid

In a recent opening for miscellaneous supplies by Navy Purchasing Office, New York, Onyx Oil and Chemical Co., Jersey City, N. J., submitted a low bid of $2.80 on 3,000 gallons of disinfectant.

Low Bids on Soap Powder

The Navy Purchasing Office, New York, included in a recent opening for miscellaneous supplies a bid for 3,950,000 pounds of soap powder for the following destinations: a, Portsmouth, N. H.; b, Boston; c, Newport; d, Brooklyn; e, Bayonne; f, Norfolk; g, Portsmouth, Va.; h, Washington, D. C.; i, Charleston, S. C.; j, Cherry Point, N. C.; k, Pensacola; l, Corpus Christi. The following firms were among low bidders: Stevens Soap Co., Brooklyn, destination a, 4.67 cents; b, 4.53 cents; c, 4.58 cents; d and e, 4.2 cents; h, 4.8 cents; Kamen Soap Products Co., New York, destinations a, b, and c, 4.48 cents; d and e, 4.19 cents; f, 4.23 cents; g, 4.45 cents; h, 4.32 cents; i, 4.23 cents; j, 4.71 cents; k, 4.73 cents; l, 5.49 cents.

Grit Soap Awards

Two recent openings for miscellaneous supplies by Army Quartermaster, Oakland, Calif., included grit soap. Awards went to Pioneer Soap Co., San Francisco, on 27,500 ten-ounce cakes with a bid of 6.68 cents each; and to Day & Frick, Philadelphia, on 64,864 ten-ounce cakes with a bid of 6.73 cents each.

DDT Solvent Bid

In a recent opening for miscellaneous supplies by Army Engineers, Norfolk, Va., lowest bid of 35.9 cents was submitted by Socony-Vacuum Oil Co., Baltimore, on 4,000 gallons of trimethylated naphthalene solvent for DDT.

Liquid Wax Bids

A recent opening for miscellaneous supplies by U. S. Post Office Department, Washington, D. C., included 12,000 gallons of general purpose liquid wax. Kem Products Corp., Brooklyn, and Trio Chemical Works, Brooklyn, submtited low bids of 49 cents.

Salt Water Soap Bid

In a recent opening for miscellaneous supplies by Navy Purchasing Office, New York, the lowest bid on 120,000 pounds of salt water soap was submitted by Kamen Soap Products Co., New York, with 17.8 cents per pound.

P.O. Soap Bid

In a recent opening for miscellaneous supplies by U. S. Post Office Department, Washington, D. C. the low bid of 9.68 cents was submitted by Stahl Soap Corp., Brooklyn, on 50,000 pounds of floating toilet soap.

Bid on Sweeping Compound

Capital Supply Co., Austin, Tex., was low bidder on 50,000 pounds of sweeping compound in a recent opening for miscellaneous supplies by U. S. Post Office, Washington, with a bid of 1.55 cents.

Lever Names Two

Appointment of Allan H. Kalmus as press bureau manager and of George H. Weiler, Jr., as community relations manager was announced recently by Lever Brothers Co., New York. Mr. Kalmus comes to Lever from National Broadcasting Co. Mr. Weiler was formerly manager of public information with Sharp & Dohme, Inc., Philadelphia.

American Distilled Oils

Produced at our Brooklyn Factory

OILS

CLOVE	BALSAM PERU	OPOPONAX
NUTMEG	CELERY	PIMENTO
ORRIS LIQUID, Conc.	GERANIOL	OLIBANUM
STYRAX	CITRONELLOL	SANDALWOOD
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OLIBANUM	STYRAX
LABDANUM	BALSAM PERU
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GEORGE LUEDERS & CO.

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Established 1885

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

Kleen-Paw—This for powdered hand soap. Filed Mar. 10, 1951 by West Disinfecting Co., Long Island City, N. Y. Claims use since Nov. 1, 1950.

Pennsorb—This for absorbent detergent used to absorb oils, greases and water from floors. Filed Mar. 23, 1951 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since Feb. 23, 1951.

Maid of Honor—This for synthetic soap powder. Filed May 10, 1951 by Sears, Roebuck & Co., Chicago. Claims use since Jan. 15, 1948.

Sanitone—This for detergent and dry cleaning compound for removing smoke and other odors from garments. Filed June 29, 1951 by Emery Industries, Inc., Cincinnati. Claims use since Mar. 1, 1949.

Flip-dip—This for detergent for washing clothes. Filed July 24, 1951 by Guido E. Caglieri, Jr., San Francisco. Claims use since June 29, 1951.

Red Mule—This for water soluble powder for removing grime from hands. Filed Aug. 25, 1951 by Macklanburg-Duncan Co., Oklahoma City, Okla. Claims use since Aug. 1, 1951.

hi—This for liquid detregent. Filed Aug. 29, 1951 by Kent Chemical Co., Dover, Del. Claims use since June 18, 1951.

Tarnoff—This for liquid metal cleaner. Filed Dec. 7, 1951 by Empire Chemical Co., Houston, Tex. Claims use since Nov. 19, 1951.

Prime-Metalake—This for detergents used for cleaning metal surfaces. Filed Jan. 18, 1952 by Finger Lakes Chemical Co., Etna, N. Y. Claims use since June 25, 1951.

Kcep—This for general detergent concentrate. Filed February 15, 1952 by Peck's Products Co., St. Louis, Mo. Claims use since 1946.

Westola—This for liquid hand soap. Filed Feb. 18, 1952 by West Disinfecting Co., Long Island City, N. Y. Claims use since Jan. 1, 1913.

Oxydol—This for sudsing cleaner, cleanser, and detergent. Filed Dec. 14, 1950 by Procter & Gamble Co., Cincinnati. Claims use since June 10, 1914.

101—This for sodium hypochlorite solution for use in washing clothes and in general cleaning of various surfaces. Filed Dec. 15, 1951 by Gardiner Manufacturing Co., Buffalo, N. Y. Claims use since 1932.

Clo—This for shampoo for human hair. Filed Dec. 20, 1951 by Bymart-Tintair, Inc., Dover, Del. Claims use since Dec. 5, 1951.

Shontex—This for liquid shampoos. Filed June 22, 1951 by Shontex Co., Santa Monica, Calif. Claims use since April 6, 1936.

Pickup—This for sweeping compound and anti-slip oil absorbent. Filed December 12, 1951 by Diversey Corp., Chicago. Claims use since October 18, 1951.

Pasilco—This for cleansers and detergents in powder form. Filed January 2, 1952 by Philadelphia Quartz Co. of California, Berkeley. Claims use since June 8, 1931.

Wax'sall — This for polish for automobiles, for hardwood floors, glass, silver, and painted and various other surfaces. Filed February 4, 1950 by Manning Holoff, Sherman Oaks, Calif. Claims use since December 21, 1949.

Soil-Tox—This for water soluble insecticide concentrate for controlling and preventing damage by subterranean termites. Filed April 27, 1950 by Termitol Co. of Pennsylvania, Pittsburgh. Claims use since March 20, 1950.

Squeek — This for household cleaning and detergent preparations having incidental water softening properties. Filed August 16, 1950 by Finger Lakes Chemical Co., Ithaca, N. Y. Claims use since June 29, 1940.

Diana Deering—This for shampoos and toilet soaps. Filed April 17, 1951 by Christy, Inc., Newark, N. Y. Claims use since July 1943.

Q-D—This for cleaning compound for removal of albuminous type stains from textile fabrics. Filed June 12, 1951 by A. L. Wilson Chemical Co., Kearny, N. J. Claims use since December 15, 1950.

V-C Tuff—This for synthetic detergent in powder form for cleaning cement, concrete and metal. Filed September 5, 1951 by Virginia-Carolina Chemical Corp., Richmond, Va. Claims use since June 7, 1951.

Tuffy—This for detergent for laundry purposes. Filed September 21, 1951 by Thomson Chemical Co., Lima, O. Claims use since July 12, 1938.

Alkali—This for detergent compositions and detergent mixtures comprising soda ash, bicarbonate of soda, silicated alkalis, and water softening materials in varying amounts. Filed July 21, 1951 by Diamond Alkali Co., Cleveland. Claims use since 1924.

Prompt—This for all purpose liquid cleaner. Filed January 2, 1952 by West Disinfecting Co., Long Island City, N. Y. Claims use since October 1, 1951.

Ipana—This for penicillin tooth powder. Filed June 16, 1951 by Bristol-Myers Co., New York. Claims use since February 15, 1951.

Happy Dog Sponge Rub—This for cleaning preparation for dogs, having insecticidal and deodorizing properties. Filed August 1, 1950 by Silby Chemical Corp., Miami, Fla. Claims use since March 1950.

Lustreclean—This for cleaning preparation for floors and painted surfaces, having incidental deodorizing, polishing and waxing properties. Filed February 21, 1952 by West Disinfecting Co., Long Island City, N. Y. Claims use since August 1938.

Warrick Freres—This for essential oils used in soaps, cosmetics, etc. Filed February 21, 1951 by Jacob Manheimer, New York. Claims use since 1859.

Sunny Sol—This for chemical preparation for use in bleaching or whitening clothes; for removing stains, dirt, and grease; for use as an antiseptic, germ killer, deodorizer and disinfectant. Filed March 14, 1952 by John Wiley Jones, Caledonia, N. Y. Claims use since December 1, 1950.

Cosmolite—This for liquid floor wax. Filed November 27, 1951 by Huntington Laboratories, Inc., Huntington, Ind. Claims use since November 1936.

Beautiflor — This for liquid cleaning and polishing preparations. Filed March 7, 1952 by S. C. Johnson & Son, Inc, Racine, Wis. Claims use since January 24, 1952.

Sanikleen — This for shaving cream. Filed August 6, 1949 by S. H. Kress and Co., New York. Claims use since November 6, 1928.

Lanolin Plus—This for toilet soap. Filed March 29, 1950 by Lanolin Plus Cosmetics, Inc., Chicago. Claims use since August 12, 1942.

D&O—This for perfume bases for use in soaps and shampoos. Filed April 24, 1951 by Dodge & Olcott, Inc., New York. Claims use since 1910.

Kreml—This for shampoo. Filed June 5, 1951 by R. B. Semler, Inc., New Canaan, Conn. Claims use since August 23, 1950.

V-C Roy—This for detergent in powder form. Filed September 5, 1951 by Virginia-Carolina Chemical Corp., Richmond, Va. Claims use since June 7, 1951.

V-C San—This for liquid synthetic detergent. Filed September 5, 1951 by Virginia-Carolina Corp., Richmond, Va. Claims use since June 7, 1951.

A. L. Dunnam Dies

Arthur L. Dunnam, manager of the Republic Creosoting Co. plant at Mobile, Ala., died suddenly August 26. Mr. Dunnam was 54 years of age.

DRYMET*

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

DRYORTH*

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O, which may also be used as an economical constituent of high pH cleaning compounds.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O—making it an economical base material for compounding.

PROMPT SHIPMENTS FROM
CONVENIENT WAREHOUSE STOCKS

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CHEMICALS

We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

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Good News FOR YOUR ISOPROPYL ALCOHOL PRODUCTS!

Isoblend Floral Odors

NEW FLOWER FRAGRANCES FOR USE WITH ISOPROPYL ALCOHOL

These new Isoblend Floral Odors cover the Isopropyl Alcohol odor and, at the same time, add a lovely flower note. They enable you to make a finished toilet water, colored any shade you desire, at the astonishingly low price of ..... **83¢** per gallon

ODORS AVAILABLE

Rose Isoblend	Jasmin Isoblend	Violet Isoblend
Lilac Isoblend	Fougere Isoblend	Wisteria Isoblend
Bouquet Isoblend	Sweet Pea Isoblend	Gardenia Isoblend
Honeysuckle Isoblend	Pine Needle Isoblend	Eau de Cologne Isoblend
Apple Blossom Isoblend	Spice Bouquet Isoblend	Orange Blossom Isoblend

Bay Rum ISOBLEND

For Bay Rum products made with Isopropyl Alcohol

This special oil, recently developed by our Laboratories, is available at only $4.25 per pound.

Formula for Use:

2 ozs.—Bay Rum Isoblend
64 ozs.—Isopropyl Alcohol 99%
Water—Quantity sufficient to make one gallon

Color—As desired

Shavlotion BOUQUET OIL

For Shaving Lotion made with Isopropyl Alcohol

Here is an oil developed especially for top quality, low priced shaving lotions. At $8.00 per pound, you can make a gallon of finished Shaving Lotion for only 80c.

Formula for Use:

1 oz.—Shavlotion Bouquet Oil
64 ozs.—Isopropyl Alcohol 99%
Water—Quantity sufficient to make one gallon

Order a trial quantity for your own experiments

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consistently low in iron, copper, nickel.. purity you can depend on for quality soap

With caustic potash that's virtually free of impurities, you can produce soap of the quality that wins and keeps consumer loyalty. You can depend on *International* for caustic potash in the purity you want. You can always be sure of shipments to your exact specifications, in the quantities you need, and with deliveries when you request them. Whatever grade of caustic potash you need, whether for soap or any other product, you'll find *International* a dependable source of supply because of its large and efficient facilities for mining, refining and manufacturing of potash and potash chemicals

FOR SOAP MAKING

Special low iron grade—45 to 50%.
Available in 675 lb. drums and tank cars.

FOR GENERAL CHEMICAL USE

Solid—90%. Available in 700 lb. drums.
Flake—90%. Available in 100, 225 and 400 lb. drums.
Granular—90%. Available in 100, 225 and 500 lb. drums.
Broken—90%. Available in 100 and 450 lb. drums.
Liquid, low iron, a sparkling clear water-white solution of 45%. Available in tank cars and 675 lb. drums.
American Selected Walnut. Available in 100 and 225 lb. drums.

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refining
mining

CAUSTIC POTASH
all standard grades

CARBONATE OF POTASH
all standard grades

POTASSIUM CHLORIDE
refined and technical grades

SULFATE OF POTASH

LIQUID CHLORINE

FERRIC CHLORIDE

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Address all inquiries to Industrial Sales Dept., Potash Division
General Offices: 20 North Wacker Drive, Chicago 6
61 Broadway, New York 6

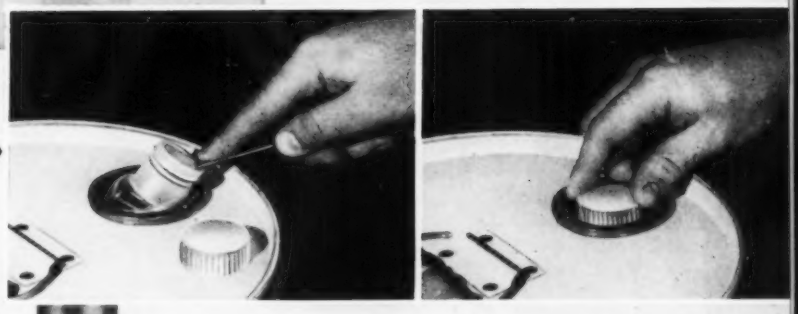
Two Reasons Why FLEXSPOUT®

Means *More* SALES of any Product Sold in Steel Pails

1

FLEXSPOUT Makes Pouring, Re-Sealing and Storing Your Products Easier Than Ever Before:

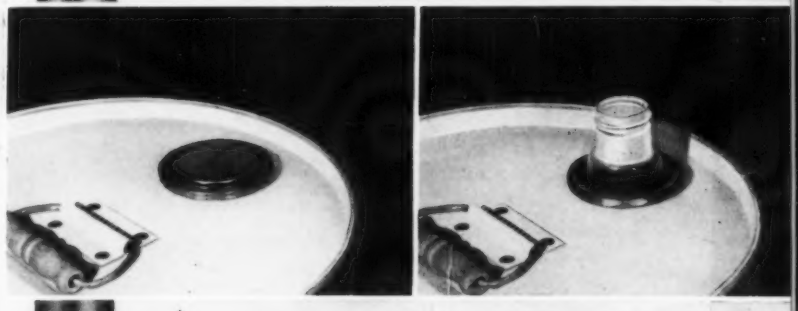
FLEXSPOUT can be opened with any pointed tool. The flexible spout eliminates muss and fuss in pouring and mixing. Re-sealing is simple and foolproof with the plastic screw-top. The spout retracts below the pail cover for easy stacking during storage.



2

FLEXSPOUT Delivers Your Product In Better Condition:

It's the first really leak-proof pail closure ever developed. It seals directly on the pail metal . . . is actually stronger than the pail itself. Since only the chemical-resistant, non-toxic plastic touches the liquid, there's no chance for contamination.



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Because words and pictures can hardly begin to describe this amazing new closure, we'll gladly send you a free sample for your inspection. Send for it today!

MAIL THIS COUPON Today!

RIEKE METAL PRODUCTS CORPORATION
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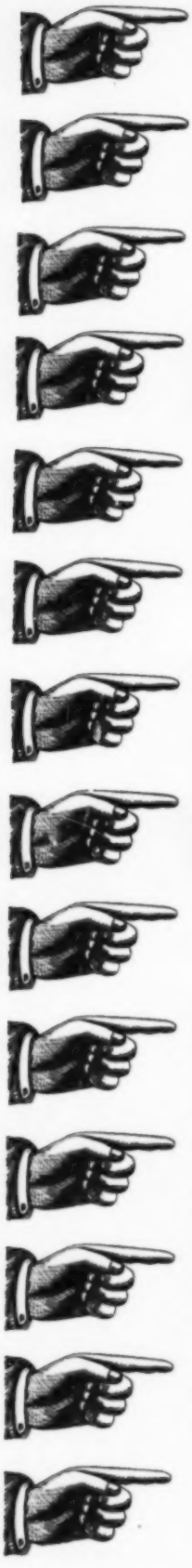

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Reduces resident skin bacteria over 97.5% . . . controlled hand-washing tests using Actamer-containing soaps showed a reduction of resident skin bacteria by more than 97.5%. Secret of Actamer's effectiveness . . . the ability to be retained on skin in minute amounts.

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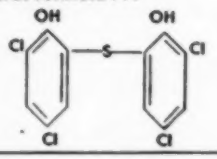

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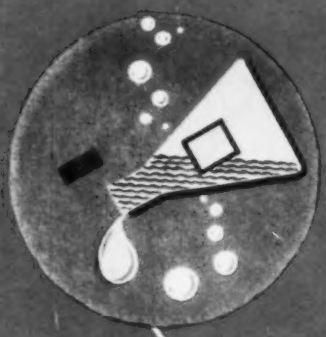

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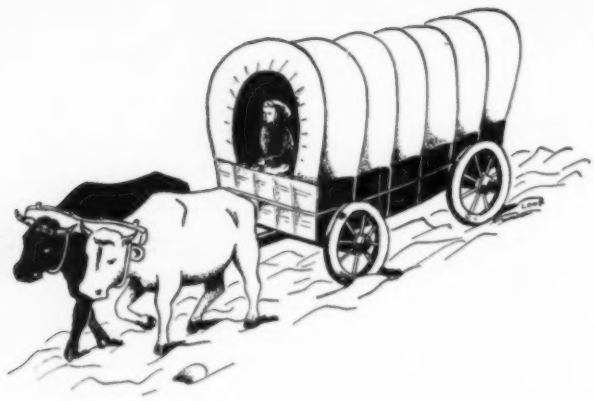

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There's room for improvement in odor in many soaps on the market today. The right perfume in a product means consumer preference. Call in the van Ameringen-Haebler perfume specialists to improve your soap and your sales with a persuasive perfume.

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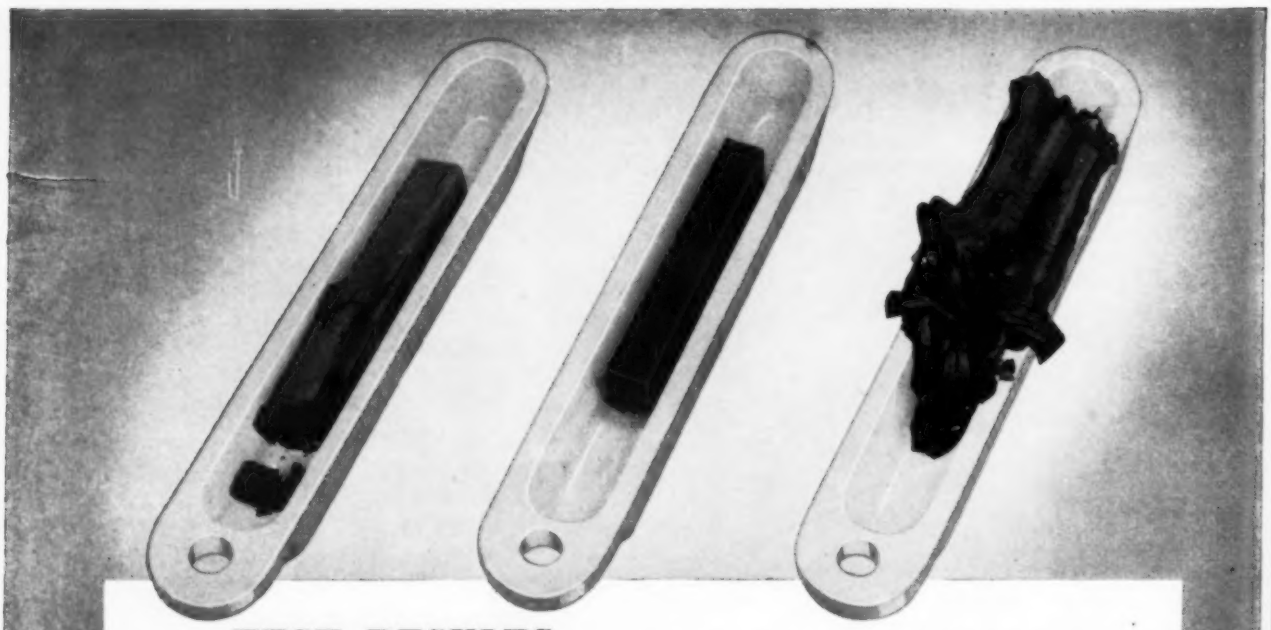
NOW...New Carboloy
for resistance to corrosion,



TEST RESULTS

1 **Oxidation resistance.** (Above, left to right.) Samples of 18-8 stainless steel. Grade 608 Chrome Carbide and tungsten carbide after exposure in air at 1850° F. for 24 hours. All were originally identical in shape and size. Grade 608 Chrome Carbide appears to be virtually completely resistant to oxidation at all temperatures up to 1000°C. (1832°F.). Samples subjected to 1850°F. were only slightly discolored.

2 **Salt spray.** After subjection to a 30% salt spray for 750 hours, Grade 608 still retained its metallic lustre.

3 **Sulphuric acid.** With sulphuric acid as the corrosive agent, Grade 608 showed about 30 times the resistance of 18-8 stainless steel, and 3 times the resistance of tungsten.

4 **Nitric acid.** Using nitric acid, the resistance to corrosion was approximately 8 times that of other carbides and twice that of stainless steel.

5 **Steam erosion.** Tests indicate a resistance to steam erosion approximately 60 times that of conventional carbides.

6 **Lactic or citric acid.** Grade 608 was practically inert under all conditions when exposed to lactic or citric acid.

PROPERTIES OF GRADE 608

The outstanding properties of Grade 608 Cemented Chrome Carbide promise to open new cost-saving applications throughout industry. You may wish to expedite your initial test appraisals by starting with the test kit (above coupon) now pending larger quantities or supplies as production facilities expand.

PHYSICAL PROPERTIES

(Grade 608)

Composition: 83% Cr_3C_2
2% WC
15% Ni

Hardness (Nominal): 88 Rockwell "A"

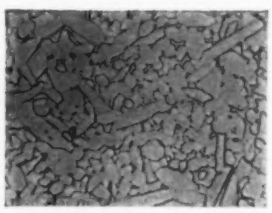
Density (Nominal): 7.0 gms/cm³ (Slightly lighter than S.A.E. 1095 steel)

Transverse Rupture Strength: 100,000 P.S.I.

Coefficient of Thermal Expansion: 6.4 x 10^{-6} in range of 70°—1292°F.

Relative Abrasive Resistance: Dry Al Oxide—58.0

GAGE ANVILS currently being made of Grade 608 Chrome Carbide. In gage blocks, ring gages, plug gages and gage anvils. Chrome Carbide has already shown an outstanding ability to resist corrosion and abrasion. Since its coefficient of thermal expansion is about the same as that of steel, readings are not affected by temperature variations.



MICROSTRUCTURE of Carboloy Grade 608 Chrome Carbide shows appearance unlike any other metal. Note, particularly, the uniformity and interlocking character of the grain structure. Chrome Carbide is lighter in weight than tungsten carbide; facilitates handling and use of solid carbide. It will pay to start your laboratory tests on Chrome Carbides now.

Chrome Carbide
abrasion, erosion

Grade 608 Carboloy Cemented Chrome Carbide, with chromium as principal ingredient, gives high resistance to corrosion or erosion, combined with good abrasion resistance. Lightweight, nonmagnetic, machineable, stable and strong, Grade 608 opens to you new areas for carbide benefits in industrial and product applications. Sample test quantities now available at nominal cost. Production quantities soon.

NOW, another great Carboloy created-metal makes its bow . . . Carboloy Grade 608 Cemented Chrome Carbide, first in an entirely new series of metallic carbides.

Grade 608 Chrome Carbide contains chromium as the principal ingredient. It is cobalt-free and practically tungsten-free. It features high resistance to corrosion or erosion, combined with good abrasion resistance.

Field tests already point up exciting new areas where Chrome Carbide will bring new cuts in costs, new highs in performance. Undoubtedly, *your* field, *your* product may benefit, too. Send for test kit to start your preliminary metallurgical and chemical test of Grade 608 today.

An expansion of carbides

Grade 608 Chrome Carbide is light in weight, completely nonmagnetic and has a coefficient of thermal expansion about the same as that of steel. It is machineable and as hard as tungsten carbide. It is stable and strong.

Fabricating and finishing techniques are the same as tungsten carbides. A flash plating of nickel makes Chrome Carbide blanks (as sintered or as ground) readily brazable with conventional brazing materials.

Series 600 may overlap a few tungsten carbide applications. But because of their unusual wearproofing properties, their wear- and corrosion-resistance, look to Chrome Carbides for famous carbide benefits to you in many new areas of industrial and product applications. Here may be new opportunities for you, starting with Grade 608.

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
Detroit 32, Michigan

"Carboloy" is the trademark for the products of Carboloy Department of General Electric Company

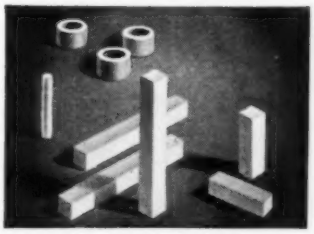
WHERE CAN YOU USE GRADE 608 CHROME CARBIDE?

Field tests indicate new Grade 608 Chrome Carbide offers unusually high resistance to corrosion or erosion combined with good abrasion resistance. For example, the following applications are suggested:

- Sheer blades for molten glass
- Core pins for baking ceramic parts
- Fishing rod guides
- Centrifuge nozzles, separating equipment
- Bearings where corrosives are present
- Textile guides
- Nozzles and valves: soaps, fats, oils, foods, chemicals, petroleum products, pharmaceuticals, fruit juices
- Valve and core pins, die casting
- Punches for movie film
- For many applications where stainless steel is not sufficiently abrasion-resistant

Where else can you use Grade 608 Chrome Carbide?

9-piece Test Kit $10.75



INCLUDES: Three bars ¼" square x 2"; two bars ¼" square x 1"; three bushings 5/16" long, ½" O.D., 5/16" I.D.; one rod ⅛" diameter x 1" long. (Bulletin WR-104 included.) Samples adequate for wide range of tests. Information relative to your particular application free, on request from Carboloy engineers. Send coupon below today for test kit.

CARBOLOY Department of General Electric Company
11133 East 8 Mile Ave., Detroit 32, Michigan

Please send free copy of Technical Bulletin WR-104 only.

Please send ( ) test kits of Grade 608 Carboloy Cemented Chrome Carbide at $10.75 each. Technical Bulletin included.

Enclosed is ☐ Check ☐ Money Order ☐ Purchase Order for $.....
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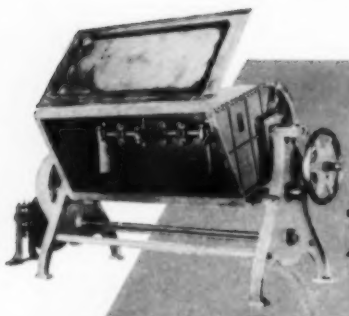
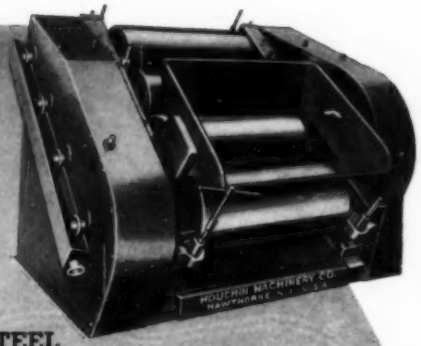
6 MACHINES IMPORTANT IN—

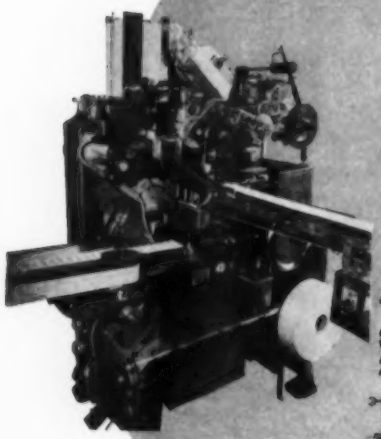
SOAP MAKING

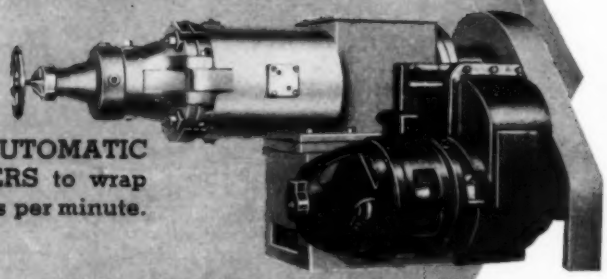


TILTING AMALGAMATOR
Other types available.



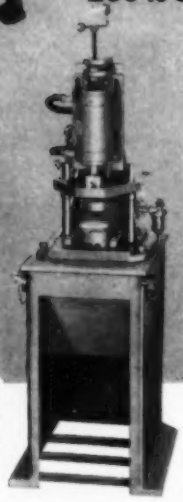
TYPE E STEEL ROLL MILL
With 18″ x 40″ water cooled rolls.



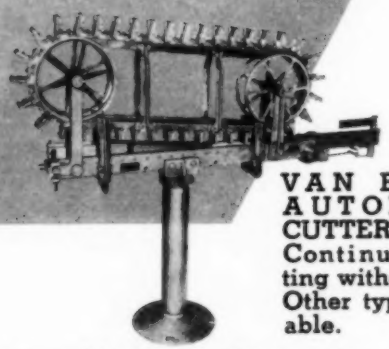


VAN BUREN AUTOMATIC SOAP WRAPPERS to wrap 200 to 300 cakes per minute.

GIANT PLODDER—Capacity 4000 to 6000 pounds per hour.



SAFETY AIR PRESS
Easier to operate. Produces consistently uniform cakes.



VAN BUREN AUTOMATIC CUTTER—
Continuous cutting without scrap. Other types available.

Houchin soap making machines include every machine required for modern soap manufacture. Available individually or in complete production ranges.

HOUCHIN MACHINERY CO., INC.

Sixth & Van Winkle Avenues — **Hawthorne, New Jersey, U. S. A.**

Manufacturers of Soap Making Machinery for over Three-Quarters of a Century

Glycerine Recovery

Point 5

By E. T. Webb

PART III

IN order to obtain maximum recovery, is it necessary to saponify all the fats on the first change? What effect does incomplete saponification have on overall recovery? Examples 8 and 9 will help to provide the answer to these questions. Once again, these examples should be compared with example 4. The only difference between them is that in example 8 only 90 percent of the fat is saponified on the first change and only 50 percent in example 9, the balance in both cases being saponified in the second change.

It will be found that in example 8 the recovery is 88.47, in example 9 it is 87.06, as against 88.70 in example 4, in which complete saponification is assumed on the first change.

Should further calculations be made, it will be found that the figures below hold good.

In each case it is assumed that the balance of fat is saponified on the second change. It is clear, therefore, that an unsaponified balance of 10

When 50% of the fat charge is saponified on the first charge recovery is..... 87.06
When 60% of the fat charge is saponified on the first change recovery is..... 87.53
When 70% of the fat charge is saponified on the first change recovery is..... 87.88
When 80% of the fat charge is saponified on the first change recovery is..... 88.24
When 90% of the fat charge is saponified on the first change recovery is..... 88.47
When all of the fat charge is saponified on the first change recovery is..... 88.70

Example 8

	Total	Anhydrous Soap	Salt, etc.	Total Water	Glycerol
1st Change					
50% f.a. soap..	171.90	93.60	2.99	67.66	7.65
Unsap. fat	10.00	....	...	....	...
Brine	12.30	....	2.95	9.35	...
Contents of kettle after settling					
58% f.a curd..	148.20	93.60	1.98	47.86	4.76
Unsap. fat	10.00	....	...	....	...
Spent lye	36.00	....	3.96	29.15	2.89
2nd Change					
58% f.a curd..	148.20	93.60	1.98	47.86	4.76
58% f.a. curd..	16.46	10.40	0.21	5.00	0.85
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	54.84	3.63
Spent lye	36.00	....	3.96	30.06	1.98
3rd Change					
58% f.a. curd..	164.66	104.00	2.19	54.84	3.63
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.13	2.34
Spent lye	36.00	....	3.96	30.75	1.29
4th Change					
58% f.a. curd..	164.66	104.00	2.19	56.13	2.34
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.96	1.51
Spent lye	36.00	....	3.96	31.21	0.83
5th Change					
58% f.a. curd..	164.66	104.00	2.19	56.96	1.51
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	57.49	0.98
Spent lye	36.00	....	3.96	31.51	0.53

Summary
% Glycerol in fat charge..... 8.50
Spent lye made..... 180.00
Ratio of fat saponified to lye made.....1.0:1.80
% Glycerol in spent lye..... 4.18
% Glycerol recovered..... 88.47
% fatty acids in settled curd at each change..... 58.00

Example 9

	Total	Anhydrous Soap	Salt, etc.	Total Water	Glycerol
1st Change					
50% f.a. soap..	95.50	52.00	1.75	37.50	4.25
Unsap. fat	50.00	....	...	....	...
Brine	22.83	....	3.30	19.53	...
Contents of kettle after settling					
58% f.a. curd..	82.33	52.00	1.09	27.21	2.03
Unsap. fat	50.00	....	...	....	...
Spent lye	36.00	....	3.96	29.82	2.22
2nd Change					
58% f.a. curd..	82.33	52.00	1.09	27.21	2.03
58% f.a. curd..	95.50	52.00	1.75	37.50	4.25
Brine	22.83	....	3.31	19.52	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	54.41	4.06
Spent lye	36.00	....	3.96	29.82	2.22
3rd Change					
58% f.a. curd..	164.66	104.00	2.19	54.41	4.06
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	55.84	2.63
Spent lye	36.00	....	3.96	30.61	1.43
4th Change					
58% f.a. curd..	164.66	104.00	2.19	55.84	2.63
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.77	1.70
Spent lye	36.00	....	3.96	31.11	0.93
5th Change					
58% f.a. curd..	164.66	104.00	2.19	56.77	1.70
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	57.37	1.10
Spent lye	36.00	....	3.96	31.44	0.60

Summary
% Glycerol in fat charge..... 8.50
Spent lye made..... 180.00
Ratio of fat saponified to lye made.....1.0:1.80
% Glycerol in spent lye..... 4.11
% Glycerol recovered..... 87.06
% fatty acids in settled curd at each change..... 58.00

S&S *Presents*~

the new
"EG" FILLING MACHINE

This most advanced "E G" Universal Filler, designed and manufactured by Stokes and Smith Company, Philadelphia, Pa., features mechanical parts located above the filling station, and includes many innovations in design, amplifying all of the versatility of the well known S & S G-1 Universal Filling Machines.

For use by volumetric filling—packing against pressure—or with combination auger and vacuum—or gross weighing.

- ***Parts located above filling station.*** Keeps parts clean from dust and dirt; helps reduce cleaning maintenance, makes machine look neater.
- ***40% less working parts.*** Totally enclosed planetary gears run constantly in oil, exceptionally quiet in operation. There are no cams or sprockets. Magnetic clutch is self-adjusting.
- ***Finger-tip changeover.*** Simplified electric control panel is conveniently located near operator.
- ***Auger speed*** *is adjustable from 500 to 1000 RPM.*
- ***Micrometer adjustment*** *for speed and accuracy.*
- ***Pre-timed for greater efficiency.*** Filling cycle can be timed to pace operator for more efficient production.
- ***Adjustable table***—the same augers can be used with varying heights of containers.
- ***Adaptable single and multiple stations*** *for automatic conveyor filling.*
- ***Compact size.*** 24" wide, 31" long, 7'7" high.

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FOOD MACHINERY AND CHEMICAL CORPORATION

STOKES & SMITH Co

4916 Summerdale Avenue
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Pacific Coast
SIMPLEX PACKAGING MACHINERY, INC.
Oakland, California

percent or even 20 percent on the first change is not likely to have much effect on the overall recovery. Any small drop sustained may be easily made good by a very slight increase in the volume of wash liquor used. It is, however, important to complete the saponification not later than the second change.

Generally, soap boilers prefer to have two bites at the saponification — one part in the first change and the balance in the second change. If one-half of the total is saponified to 90 percent in the first change, it follows that only 45.0 percent of the total fat is saponified, and this, according to the above figures, will result in a 2.0 percent drop in the glycerol recovery. When saponification in two parts is necessary, every effort should be made to deal with not less than 75 percent of the charge, or a part of the charge containing 75.0 percent of the total glycerol in the charge, in the first change. Even this would only give an initial saponification of 67.0 percent assuming that 90.0 percent of the fats engaged were saponified. This manner of working would involve a reduction of 1.2 percent in the glycerol recovery when set against full saponification of the charge on the first change.

The above comparisons only hold good, of course, when the same quantity of wash liquor is used in all cases. The loss in efficiency due to low percentage saponification on the first change may be made good by increasing the volume of wash liquor used.

Thus, to give equal recovery to example 4, the following amounts of wash liquor would be required for different saponification percentages on the first change.

100% saponification would require..... 180.0 wash liquor (Example 4)
90% saponification would require..... 181.8 wash liquor (Example 4)
80% saponification would require..... 183.6 wash liquor (Example 4)
70% saponification would require..... 185.4 wash liquor (Example 4)
60% saponification would require..... 187.2 wash liquor (Example 4)
50% saponification would require..... 189.0 wash liquor (Example 4)

It will be seen that the extra amount of each liquor required to counteract low initial saponification is not very important. Even with an initial saponification of only 50 percent on the first change, the increase in spent lye production in order to restore the recovery is only 5.0 percent.

A note of warning, however, may be necessary. In the above calculation it has been assumed that the same rate of settling is obtained in all cases, but it should be observed that if too much free oil is present in a kettle, the rate of lye separation may be retarded.

Point 6

IS there anything to be gained by using the spent lyes from the last change of a boil in place of water for the making of brine liquor and caustic

Example 4

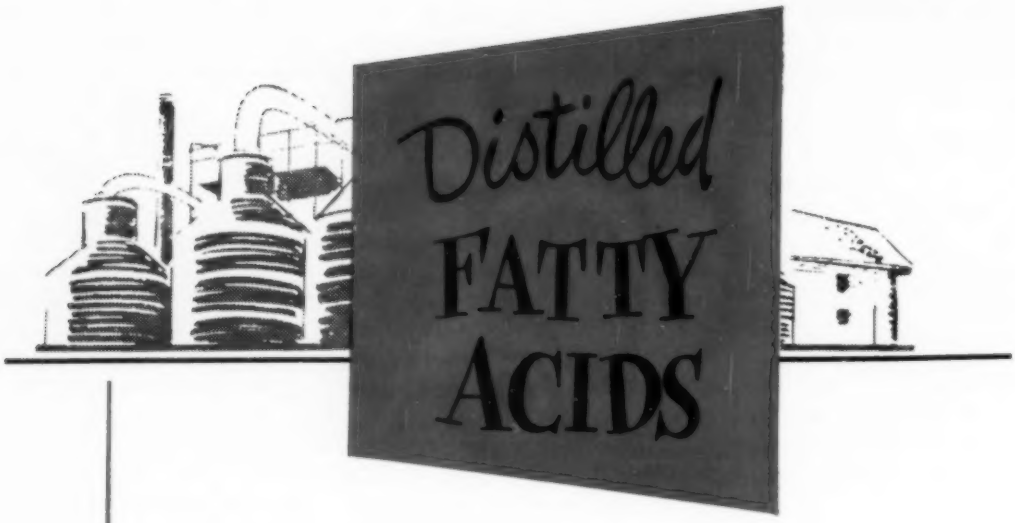
	Total	Anhydrous Soap	Salt, etc.	Total Water	Glycerol
1st Change					
50% f.a. soap..	191.00	104.00	3.50	75.00	8.50
Brine	9.66	....	2.65	7.01	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	52.97	5.50
Spent lye	36.00	....	3.96	29.04	3.00
2nd Change					
58% f.a. curd..	164.66	104.00	2.19	52.97	5.50
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	54.92	3.55
Spent lye	36.00	....	3.96	30.09	1.95
3rd Change					
58% f.a. curd..	164.66	104.00	2.19	54.92	3.55
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.18	2.29
Spent lye	36.00	....	3.96	30.78	1.26
4th Change					
58% f.a. curd..	164.66	104.00	2.19	56.18	2.29
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.99	1.48
Spent lye	36.00	....	3.96	31.23	0.81
5th Change					
58% f.a. curd..	164.66	104.00	2.19	56.99	1.48
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	57.51	0.96
Spent lye	36.00	....	3.96	31.52	0.52

Summary
% Glycerol in fat charge..... 8.50
Spent lye made..... 180.00
Ratio of fat saponified to lye made.....1.0:1.80
% Glycerol in spent lye..... 4.19
% Glycerol recovered..... 88.70
% fatty acids in settled curd at each change..... 58.00

Example 10

	Total	Anhydrous Soap	Salt, etc.	Total Water	Glycerol
1st Change					
50% f.a. soap..	191.00	104.00	3.50	75.00	8.50
Brine	9.66	....	2.65	6.49	0.52
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	52.64	5.83
Spent lye	36.00	....	3.96	28.85	3.19
2nd Change					
58% f.a. curd..	164.66	104.00	2.19	52.64	5.83
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	54.70	3.77
Spent lye	36.00	....	3.96	29.98	2.06
3rd Change					
58% f.a. curd..	164.66	104.00	2.19	54.70	3.77
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.03	2.44
Spent lye	36.00	....	3.96	30.71	1.33
4th Change					
58% f.a. curd..	164.66	104.00	2.19	56.03	2.44
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	56.89	1.58
Spent lye	36.00	....	3.96	31.18	0.86
5th Change					
58% f.a. curd..	164.66	104.00	2.19	56.89	1.58
Brine	36.00	....	3.96	32.04	...
Contents of kettle after settling					
58% f.a. curd..	164.66	104.00	2.19	57.45	1.02
Spent lye	36.00	....	3.96	31.48	0.56

Summary
% Glycerol in fat charge..... 8.50
Spent lye made..... 144.00
Ratio of fat saponified to lye made.....1.0:1.44
% Glycerol in spent lye..... 4.80
% Glycerol recovered..... 88.00
% fatty acids in settled curd at each change..... 58.00
Note. Assumption being that lyes from 5th Change are re-used in subsequent boil.



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soda?

In example 10, which once more should be compared with example 4, the spent lyes from the last change of example 4 have been used in making the caustic soda and brine liquor used on the first change. These lyes contain 31.52 water, 3.96 salt and 0.52 glycerol. In example 10 it is assumed that these lyes can be suitably employed in making the caustic and brine liquor used in the first change. Consequently, in addition to the 8.50 glycerol in the fats, an extra amount of glycerol, viz: 0.52, the total glycerol in the 36.0 of lye returned, must be allowed for. No returned lye is used in any of the last four changes.

The summary of this example shows that the overall recovery works out at 88.0 percent as compared with 88.7 percent for example 4, and that the spent lyes made amount to 144.0 containing 4.80 percent glycerol, as compared with 180.0 containing 4.19 percent in example 4. The 144.0 of spent lyes is arrived at on the assumption that the spent lyes of the last change will again be returned to process and not passed to the glycerine department.

It is obvious, therefore, that provided there are no objections to the re-employment of these weak spent lyes, an important saving is offered by this idea. It may be noted that if example 4 had been given a total wash of 216.0 instead of 180.0, the overall recovery would have been 92.7 percent and not 88.70 percent. To do this, five changes, each of 43.0, would be required and if the lyes of the last change were returned to process as suggested, the total lye production would have been 172.0 instead of 180.0. The net result therefore would be a 4.0 percent improvement in overall recovery with a rather smaller volume of spent lye.

The advantage offered by the re-employment of the weak spent lyes may be summed up as follows: (a) the overall recovery may be increased without involving any increase in the spent lye production or (b) the same recovery may be obtained with the production of a smaller quantity of spent lye. In example 10 it is assumed that all the returned spent lye was consumed on the first change. For obvious reasons very different results would follow if these returned lyes had been used, in their entirety, in any of the other changes. For example:

88.0% recovery would be obtained if all the lyes were used in the 1st change
87.0% recovery would be obtained if all the lyes were used in the 2nd change
87.06% recovery would be obtained if all the lyes were used in the 3rd change
86.12% recovery would be obtained if all the lyes were used in the 4th change
84.82% recovery would be obtained if all the lyes were used in the 5th change

All these recoveries must be compared with the 88.7 percent of example 4 in which no returned lyes were used. Of course, the drop in recovery as shown above could be rectified by using more wash liquor, but any such increase would have the effect of increasing the volume of spent lye produced, and this in turn would diminish the net saving in spent lye production.

To counteract the drop in recovery to 84.82 percent for example, 2.90 more wash liquor per change would have to be used. That is, to restore the recovery to 88.00 the additional liquor required would result in the net production of 155.6 spent lye, as compared with 144.0 (example 10). Obviously, if the returned lyes are to be used entirely on one change, then, in order to enjoy the fullest benefit they should be used only on the first change or, at most, the first and second changes.

A much better way is to spread the returned lyes over the five changes. It will be found, if the reader cares to make the calculation, that if the returned lyes from example 4 were returned at the rate of 7.2 per change, the recovery would work out at 86.71 percent. This would involve the introduction of 0.10 of glycerol with the brine liquor on each change. To bring the recovery (86.71 percent) into line with that of example 4, (88.70 percent) the volume of wash liquor in which the returned spent lye would be included, required per change would be 37.5 as compared with 36.0 in example 4. The final result, assuming that the lyes from the fifth change were returned to process, would work out at 88.7 percent recovery with a net spent lye production of 150.0 compared with example 4. This shows a net overall saving of about 17.0 percent in spent lye production without in any way impairing the glycerol recovery.

Summary

SUMMING up, it may be said: (1) it is perhaps preferable to spread returned lyes over five changes, rather than attempt to absorb them in one change only. The immediate effect of introducing spent lyes containing glycerol into the kettle process, is a reduction in overall recovery. This tendency however may be counteracted by the employment of a slightly higher volume of wash liquor on each change but, as has been shown in the figures above, the net production in spent lye production may be rated as 17.0 percent without entailing loss in the glycerol recovery. (2) It is unnecessary and even inadvisable to use weak spent lyes in the preparation of caustic soda liquor. The volume of weak lyes from the last change can easily be consumed in the production of brine liquor.

In concluding the notes on this point, it may be said that the idea of using weak spent lyes for the production of brine liquor is an attractive one. Objections to the practice may be made on the grounds that the color and perhaps odor of the soap on which it is used may be adversely affected. This objection in certain cases may be sustained, but very rarely. Much depends on circumstances, but the proposal is certainly worth a trial. Where there is doubt on this score of color and odor it might be advisable to use all of the returned lyes on the first change, which method would offer a better opportunity of removing undesirable impurities and odors in the subsequent four washes.

What is important is to avoid the addition of large quantities of the returned lyes in the last changes, because very naturally unnecessary additions of glycerol at these points have a more marked effect on the recovery efficiency or they will necessitate an

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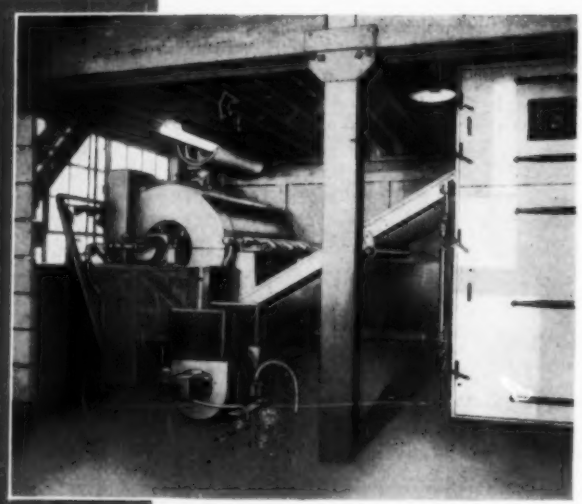

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New ACS Monograph

Soluble Silicates, volume I, Chemistry, by the late James Garrett Vail, Philadelphia Quartz Co. Published by Reinhold Publishing Corp., New York. Cloth, 6" x 9", 357 pages. Price $9.00.

This present monograph, written to replace the out-of-print *Soluble Silicates in Industry*, is divided into two volumes. Volume I is devoted to the theoretical aspects of the subject, covering manufacturing processes, properties of homogenous and heterogenous systems of glasses, formation of metallic silicates, etc. The book addresses itself to those who, "although not necessarily technically trained, have by virtue of experience or interest a desire to become better acquainted with soluble silicates."

Stauffer Revises Catalog

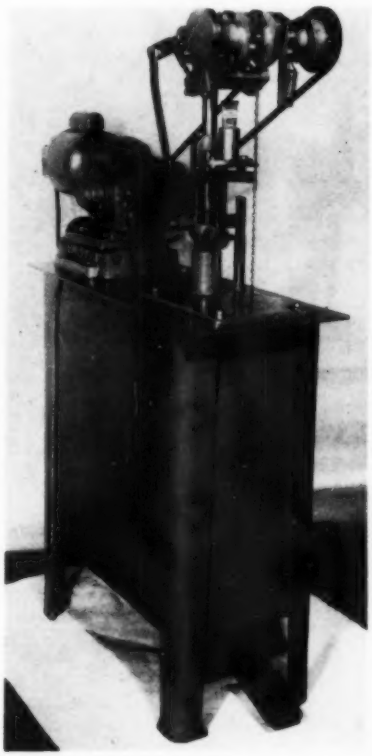
Stauffer Chemical Co., New York, recently issued a revised 112 page edition of its general catalog of basic chemicals. As in previous editions, detailed data are supplied on all products, including numerous tables on specific gravity, viscosity, specific heat, solubility, etc. Information on uses, packing and shipping regulations is included. Several comparative charts and conversion tables are appended.

Hydrides Reviewed

An Introduction to the Chemistry of the Hydrides by Dallas T. Hurd, General Electric Research Laboratory. Published by John Wiley & Sons, New York. Cloth, 9½" x 6", pp. 231. Price $5.50. According to the author this book is not intended to be a "catch-all" reference book of hydride chemistry. It is intended to offer a critical and coordinated presentation of the theory, the properties, and the reactions of the hydrides that will be of value to the chemist, and to convey the magnitude of this widely diversified field to both industrial and academic chemists.

New Tube Closer

Perl Machine Mnaufacturing Co., Brooklyn, recently announced a new "Magic" collapsible tube closing



machine. The new machine closes each tube automatically with three folds in one revolution, two folds in one direction, one in a reverse direction. The folds are made neat and secure and require neither crimping nor clips.

The operation of the machine is made so that maximum production can be obtained with unskilled help. The tube is merely inserted into the holder and the foot pedal depressed. The machine automatically closes the tube and stops itself.

Machines are available with interchangeable tube holders to accommodate tubes from ¼" to 2½" in diameter at speeds up to 50 tubes per minute.

Eye Toxicity of "G-11"

Toxicity of "G-11" (hexachlorophene) to the eye mucosa of rabbits was the subject of tests described in a recent issue of *Sindar Reporter*, house organ of Sindar Corp., New York. The experimenters arrived at the following conclusion: a single instillation into the conjunctival sac of the rabbit's eye of 0.1 ml. of a solution of 2 per cent "G-11" monosodium salt in 40 per cent (by weight) of aqueous propylene-glycol is non-irritating.

Chemical Plant Book

Chemical Engineering Operations by F. Rumford, Chemical Publishing Co., New York, 1952. 200 illustrations, price $7.50.

This book addresses itself to the chemical technologist and engineer, particularly the beginner and student. It is concerned with the basic principles of chemical plant operation. It discusses the most important processes used in the industry, and the principal types of apparatus for carrying them out. Theoretical aspects of works procedures, their mathematical foundations and practical phases are considered.

New Schimmel Report

The new 1949-1950 edition of *Schimmel Report* on essential oils, aromatic chemicals, and related materials, was recently issued by Schimmel & Co., New York. Summarizing developments in the field of volatile oils and synthetic perfume materials during the years 1949 and 1950, it devotes the first section, as usual, to a review of articles relating to the chemical and physical properties of the natural essential oils which appeared in scientific journals during the period covered.

Among the papers reviewed in the section headed "aromatics" are studies on the structure of patchouli alcohol and the structure of an autoxidation product of menthofuran which is found in oxidized peppermint oil.

Statistics on world trade in essential oils are carried in another section, and a detailed bibliography concludes the report.

The current edition of *Schimmel Report* costs $4.50 in the United States and Canada, $4.75 elsewhere. Editions of 1945, 1946, and 1947-1948 are still available at $3.00, outside the United States and Canada at $3.25.

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PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

Materials Handling Equipment

THE handling of raw materials and finished products in the chemical specialties industry is an important item of cost. The operations include warehousing, processing, packaging and storage of finished products. In cases where purchase or rental of a building for handling sanitary chemical products is contemplated, or the redesign of existing facilities is to be undertaken, it should be remembered that present decisions will affect costs continuing into the future. In too many cases, snap judgment with no thought of the future has resulted in a plant warehousing layout characterized by disorder and much waste of labor. Unfortunately, cost systems generally do not depict fully materials handling charges. If such charges are analyzed carefully, the amount represented by wages is found to be surprisingly large.

Among the types of equipment required for materials handling are: wheel trucks, skids and pallets, motorized trucks, tractors or jitneys, monorails and trolleys and conveyors.

The importance of wheel trucks is often overlooked because they are considered too simple for close attention. This is not true. Wheel trucks come in a number of varieties. Some are high; some are low; some have three wheels; some four; some have four swivel casters, others but two; some have two central high wheels with forward and rear guide

DR. THOMSSEN

casters; and others have three wheels, two of which are fixed, the other consisting of a rear swivel guide wheel. Some of these types are better suited for handling raw and finished materials than others. It is good practice to consider each type from the standpoint of package size and weight, as well as the areas from which materials are to be loaded and transmitted.

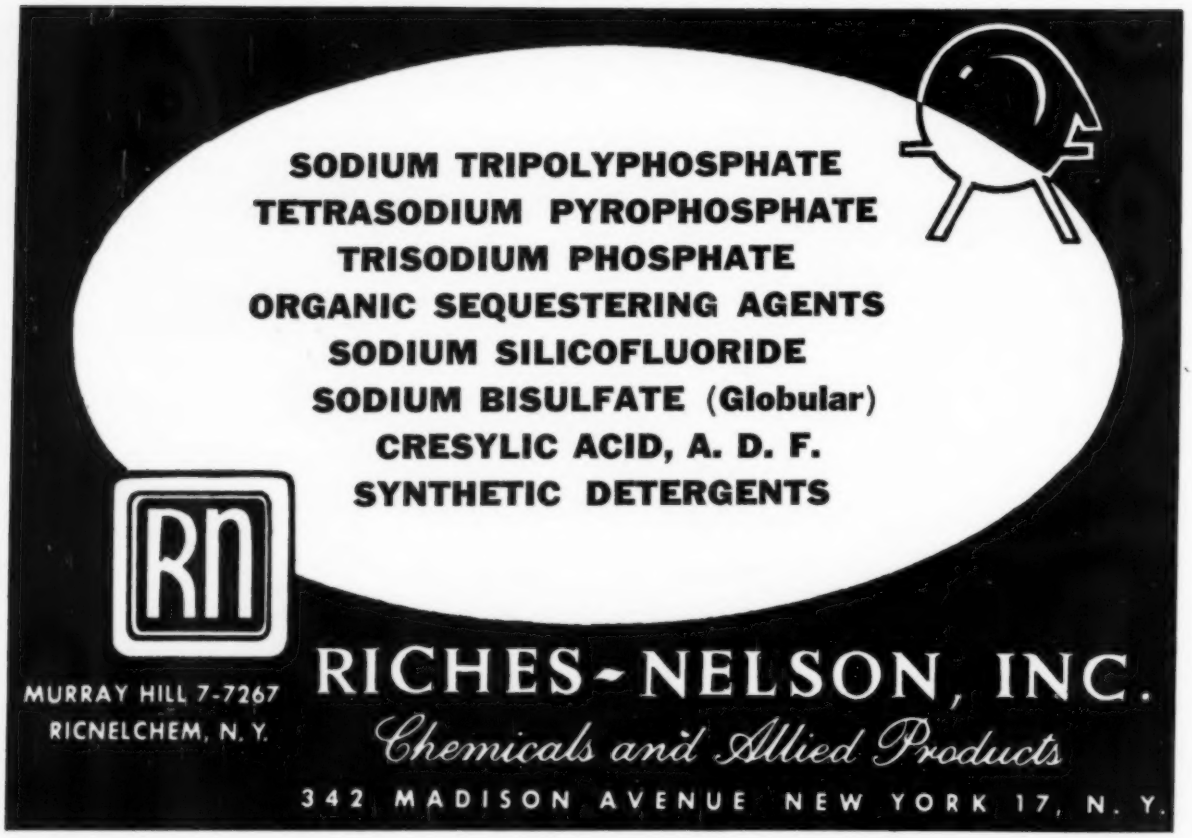
In addition, wheel trucks, hand trucks, barrel trucks, bin trucks, platform trucks, table trucks and shelf trucks are available. Selection of a particular unit should depend upon the purpose for which it will be used. Trucks are also available which will climb short stair flights frequently found in smaller plants having different floor levels. It is wise to purchase trucks having rubber tires and ball bearings. These permit larger loads per man and reduce the wear on floors subject to heavy loads.

The use of skids or pallets eliminates the rehandling of materials which are moved on hand trucks. Pallets or skids consist of a platform which, when once loaded, remains so until the goods are required for manufacture or shipment. In using these devices, it is good practice to have one load suffice for the manufacture of a batch of any product. Empty skids and pallets require storage space and stacking labor. Of the two, skids, capable of carrying the entire load and moved about by a lift truck, usually are more costly to handle than pallets. Pallets consist of flat crates and are flat on both sides. These crates or pallets are moved by a pallet truck, the forks of which enter between the top and bottom. One pallet may be placed atop another to distribute the load. They may be stacked higher than is possible with skids and one pallet may be removed at a time. While newer type trucks for skids and pallets will turn in a smaller area, it is quite necessary to have broad aisles where such trucks are employed.

In cases where goods must be hauled for longer distances and loads vary in character, tractors and jitneys are advisable. Another device used is

Below: "Little Helper" (Model 434-1) and gravity wheel conveyor system of A. B. Farquhar Co., York, Pa.

Permanent installation conveyor (No. 436, frame only) unit of A. B. Farquhar Co., York, Pa. This model is for light and medium duty. It has a 12 inch belt.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Conveyor systems, generally employed for loads that consist of more or less uniform packages, are rigid. There are a large number of types to fit practically any requirement. Those used in the chemical specialties industry consist mainly of roller, belt and apron conveyors. We must not overlook the use of bucket and screw conveyors, as well. These find extensive application in handling powdered and granular materials.

In laying out conveyor systems, some plant men do not realize that these may be used not only to move materials in a straight line but also around such bends and curves as L's, Z's, and U's. Very often such arrangements permit more economical use of labor. In the case of the U arrangement, for example, empty packages may be put on one end of the line and after being filled and replaced on the conveyor, be taken off at the other end which is adjacent to the take-off. One man by such an arrangement may load and unload the conveyor, whereas in a straight line layout two men, one at each end, are required. It is also possible by the use of boosters and chutes to convey packages up or down between floors.

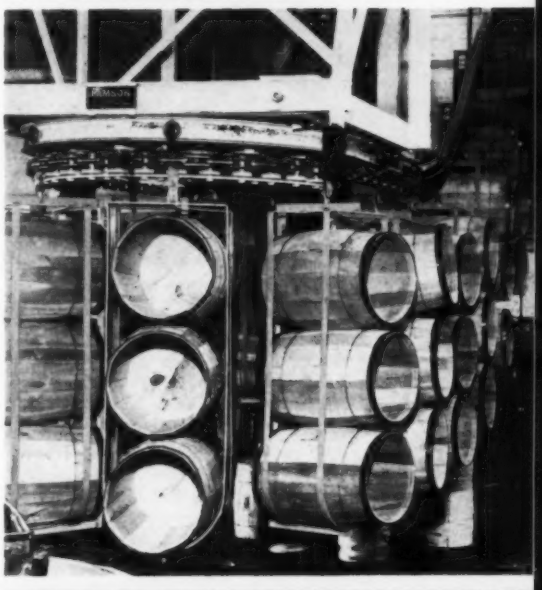
Some other considerations regarding conveyors are pertinent. If different size packages are to be transported in quantity, it has been found to be more economical to use several conveyor lines. If but one line is used, the storage feature is lost and a rehandling problem in sorting the packages results. In addition, a trucking problem arises in moving the sorted packages to their destination.

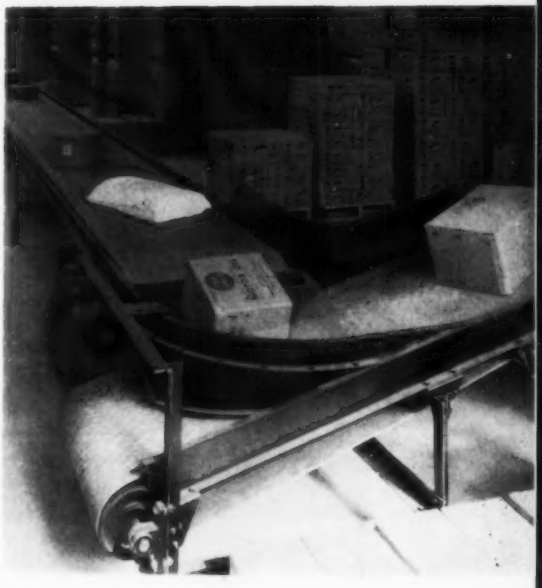
Roller conveyors are recommended when the packages are fairly rigid, and uniform in size. Such conveyors are well adapted to multi-story buildings or one-story buildings having high ceilings, which provide sufficient gravity fall. For satisfactory operation, about one-half inch per foot drop is desirable. Roller conveyors require no power under these conditions. If operated on the level, however, belts may be used to motivate the rollers. Rollers operate most satisfactorily when packages are uniform. If small and large units are handled, they are less efficient because, when made wide enough to handle the large units, they are too large for smaller packages. This causes tipping and unless rollers are placed very close together they will ride sideways. Soft packages do not travel satisfactorily on roller conveyors.

In cases where units varying in size, type and character are transported, the use of belt or apron conveyors is desirable. While these travel mostly in straight lines, it is possible to employ transfer units at right angles or at angles down to 45 degrees to the main belt. Belt conveyors are more versatile than rollers and must be power driven. For smaller plants, a belt conveyor on casters with work boards is a handy piece of equipment.

Since simple materials handling equipment is not expensive to buy and many economies may be realized by the use of these various devices, it is advisable to install them, particularly if due attention is given to selection of the best piece of equipment for the job to be done.

(*To be continued*)





Right, top to bottom, three types of conveyors made by Lamson Corp., Syracuse, N. Y. Top is roller conveyor; center is unusual chain and link conveyor for barrels; bottom is L shaped belt type conveyor.

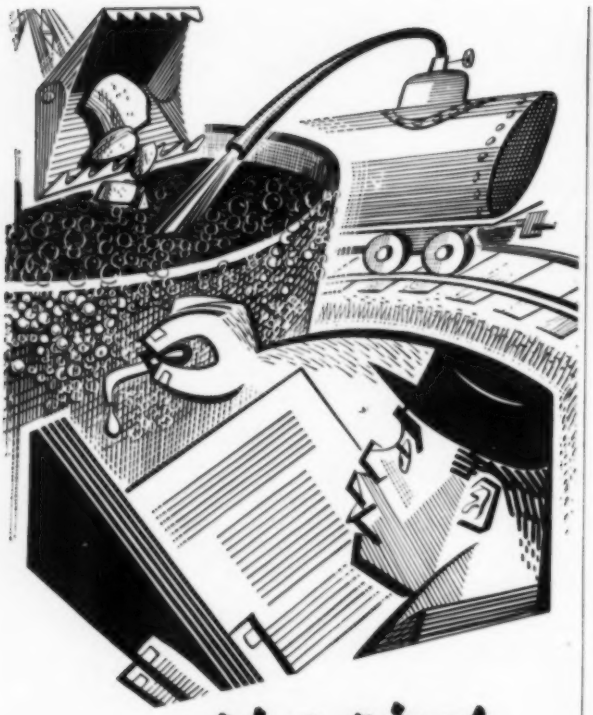
Improved Plug Valve

A PLUG valve that is finding use in soap pipe lines is now being made by Cameron Iron Works, Inc., Houston, Tex. It combines the advantages of a gate and plug valve and does not have the defects of either, according to the maker. The seat of this valve is not attached to the valve body. By being a separate unit it utilizes pressure to improve the seal and eliminates body distortion effects. No lubrication is required to operate this lift plug valve easily.

Vacuum Cleaner

THE "Tornado" cleaning machine, offered by Breuer Electric Manufacturing Co., Chicago, picks up dirt, metal chips, water, oil, and scrubbing solutions from a floor with air pulled into the dirt collector at 300 m.p.h.

(*Turn to Page* 114)



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Products and PROCESSES

Soap Refrigeration

Modern soap cooling is the subject of an article by H. Schuck in *Seifen-Oele-Fette-Wache*, No. 7, 1952, p. 409. Development of soap cooling equipment since its inception some seventy years ago is briefly outlined. Various types of modern refrigerating presses are described and evaluated. Techniques of cooling soap in presses operating with pressure and without pressure are described, and the respective virtues of top feeding and pressure feeding from below are mentioned. A special paragraph is devoted to refrigeration of soap containing a high percentage of fillers, such as is made during periods of fat shortage.

—— • ——

Floor Disinfectant

Disinfecting compositions for floors and other surfaces are covered by British patent No. 613,968. They comprise a liquid preparation of potash soft soap in admixture with cresylic acid, containing no added water, together with a synthetic detergent, such as a sodium alkyl sulphate of medium carbon-chain length. In use, the compositions may be diluted with water.

—— • ——

Algin in Soap

Five to 10 percent of sodium alginate was added to the solutions of sodium soaps of soybean oil, beef tallow, and hardened whale oil. The addition of sodium alginate has no effect on surface tension or emulsifying ability; it favors foaming ability, particularly with regard to foam retention. *J. Chem. Soc. of Japan*, Ind. Chem. Sect. 52, 308-9 (1949) through *Chem. Abstracts*, vol. 46, p. 7347.

—— • ——

Detergent for Fat

Determination of fat content of milk and cream by the use of detergents is the outcome of recent experiments by the U. S. Department of Agriculture. Instead of using sulfuric acid to act upon milk proteins and break down the oil-water emulsion, as in the long-established Babcock test, dairy chemists are employing a low cost detergent and alcohol to enable the separated fats to rise and be "read" directly in the neck of the test bottle.

In addition to permitting a clearer and more precise reading of the fat column in the test bottles, the detergent compound makes them easier to clean. At the same time the corrosive action of the acid is eliminated. While these experiments have been successful in their initial stages, further work is being done to simplify the test.

—— • ——

Powdered BHC

Crystalline $C_6H_6Cl_6$ is prepared by reaction of O_6H_6 and Cl; the C_6H_6 remaining in the residual oil is recovered by steam distillation, and the residual oil is treated with talc or bentonite and dried to give a powdered preparation containing $C_6H_6Cl_6$. Japanese patent 886 (1950), through *Chem. Abstracts*, vol. 46, No. 16, p. 7702.

—— • ——

Disinfectant Vapors

A disinfectant vapor mixture contains 335 parts of trioxymethylene, and 165 parts of barium dioxide (peroxide). The latter may be substituted by other peroxides or persalts or by potassium permanganate. Warming of the product for vaporizing trioxymethylene is not needed. Italian patent No. 464,553. Through *Chem. Abstracts*, vol. 46, p. 7720.

—— • ——

Sterilizing Detergent

A sterlizing detergent composition, which in aqueous solution is of low surface tension yet produces an unstable foam, is covered by British patent No. 618,433. The composition consists of an alkaline detergent other than a silicate containing detergent and 0.5 to 5 percent of a water-soluble or water-miscible alkyl quaternary ammonium halide or hydroxide whereof two of the alkyl groups each have not less than six nor more than nine carbon atoms in the chain and the other two alkyl groups each have not more than three carbon atoms in the chain. N-hexyl-N-heptyl-N-propyl-N-methyl ammonium hydroxide and N-N-dioctyl N_1 N_1 dimethyl ammonium bromide are preferred quaternary compounds and weak alkalis such as sodium carbonate or trisodium phosphate are suitable alkaline detergents. 0.25 to 2 percent of the composition is used in aqueous solution at a temperature not exceeding 65°C. The provisional specification also describes the use of alkali silicates as the alkaline detergent and gives examples in which sodium metasilicate is used.

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Fly-Killing Liquid

A liquid containing formalin, 35 percent; water, 50 percent, $CaCl_2$, 10 percent; and sugar, 5 percent, kills flies and is covered in Japanese patent 1332 (1950), through *Chem. Abstracts*, vol. 46, No. 16, p. 7704.

—— • ——

Stable Soap Bubbles

Composition for producing stable soap bubbles consists of a mixture of approximately 15 percent rubber dispersion with a soap solution. German patent No. 807,423.

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Syndets in Dentifrices

Foaming and wetting agents in dentifrices are discussed in a recent issue of "Schimmel Briefs", published by Schimmel & Co., New York. Sulfated and sulfonated detergents generally have greater foaming power than white soap, used in most of the older dental powders and creams. They are more effective in hard water, and are particularly useful in dentifrices containing soluble salts which are incompatible with soap, as for example in perborate or ammoniated dentifrices. Detergents which are primarily wetting agents promote the penetration of antiseptic ingredients into the film of mucin which adheres to the teeth.

Whereas white soap has a mild, alkaline taste, which is easily masked, most synthetic detergents present a taste problem. In the use of alkyl aryl sulfonates, in which the alkyl group is derived from a petroleum fraction in

(*Turn to Page* 114)

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NEW Patents

The information below is furnished by patent law offices of

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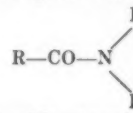
The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50c for each copy desired. $1.00 for Canada. They will be pleased to give you free preliminary patent advice.

No. 2,603,605. Process for Production of Washing Powder from a Normally Oily Liquid Synthetic Soapless Detergent, patented by Frederick J. Pollok, Troon, Scotland, assignor to Imperial Chemical Industries Limited, a corporation of Great Britain. The patent describes a process for producing non-exuding washing powders from a normally oily, liquid, synthetic soapless detergent which comprises combining in water, a water-soluble cellulose ether selected from the group consisting of a water-soluble methyl ethyl ether of cellulose, a water-soluble methyl ether of cellulose, a water-soluble methyl ether of cellulose, a water-soluble hydroxy ethyl ether of cellulose and a water-soluble alkali metal salt of a carboxy-methyl cellulose with an oily, liquid condensation product resulting from the reaction of of a polyethylene oxide and an alkyl phenol in sufficient quantity to form a jelly with said cellulose ether, and admixing with said jelly approximately an equal amount by weight of inorganic solid ingredients selected from the group consisting of sodium bicarbonate, sodium carbonate, sodium sesquicarbonate, sodium sulphate and mixtures thereof.

No. 2,607,788. Refining of Glyceride Oils, patented by Benjamin Clayton, Pasadena, Calif. The patent describes the process of alkali refining a glyceride oil, which comprises, mixing said oil with an aqueous solution of soda ash having a concentration between approximately 10° and 20° Bé. and in an amount between approximately 1¼ and 2 times that necessary to neutralize the acidity of said oil, thereafter continuously centrifugally separating the resulting mixture into soapstock and oil at a temperature between approximately 70° and 110° F. and maintaining said mixture and the separated soapstock and oil during said separating under an imposed pressure between approximately 10 and 50 lbs. per square inch gauge, and thereafter mixing the separated oil with an aqueous solution of caustic soda and continuously centrifugally separating the resulting soapstock therefrom to produce a purified oil.

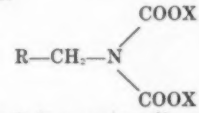
No. 2,607,740. Liquid Anionic-Dialkylolamide Detergent Composition, patented by Peter T. Vitale, Brooklyn, N. Y., and Ralph Spencer Leonard, East Orange, N. J., assignors to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. A concentrated liquid detergent composition is patented consisting essentially of water-soluble detergent selected from the class consisting of water-soluble salts of anionic sulfated and sulfonated detergents having a long aliphatic chain of 8 to 22 carbon atoms, and a dialkylolamide compound represented by the formula:



wherein R—CO— is a fatty acyl radical of 10 to 14 carbon atoms, and R' and R" are hydroxyalkyl groups of up to about five carbon atoms each, the ratio of said dialkylolamide compound to anionic detergent being from about 1:10 to about 2:1 by weight, and said dialkylolamide and anionic detergent together being at least about 30% by weight in a selective liquid solvent therefor.

No. 2,607,741. Cleansing Composition, patented by Jerome W. Arkis, Hammond, Ind., and Donald Irvine Walker, Evanston, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana. An emulsifiable floor and driveway cleaner is covered comprising about 13% by volume of a sodium soap of a mahogany acid having a molecular weight of about 450 to about 470, about 2% by volume of a sodium rosin soap and about 85% by volume of a catalytic reformed naphtha bottoms boiling between about 400° F. to about 750° F.

No. 2,606,830. Stable Concentrated Herbicidal Composition, patented by Jonas Kamlet, New York, N. Y., and William T. McLaughlin, Pittsburgh, Pa., assignors to Pittsburgh Coke & Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania. A concentrated, herbicidal composition is described having a pH in excess of 7.0 containing a chlorinated aryloxyacetic acid capable of being diluted with water containing alkaline earth metal ions to form a diluted spray solution stabilized against forming an insoluble alkaline earth metal salt of the aryloxyacetic acid in an appreciable period of time which comprises 20 to 95% of a water-soluble amine sale of a chlorophenoxyacetic acid, 0.3 to 2.0% of a cation-sequestering agent of the general formula:



wherein R is a carboxylic group containing radical and X is a monovalent cation, and 0.5 to 5.0% of a non-ionic surface-active agent.

No. 2,606,139. Pesticidal Compositions Comprising N-Vinyl Carbazole and Tetraethylpyrophosphate, patented by Hubert G. Guy, Mount Lebanon, Pa., assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware. A composition comprising N-vinyl carbazole and tetraethylpyrophosphate is described.

No. 2,607,738. Bleaching, Sterilizing, Disinfecting, and Deterging Compositions, patented by Edgar E. Hardy, Annison, Ala., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware. The patent covers a substantially dry stable composition of matter consisting essentially of trichlorocyanuric acid, and a water soluble alkaline compound selected from the group consisting of alkali metal and ammonium salts, said trichlorocyanuric acid being employed in an amount varying from 0.5% to 90% by weight.

Sayers Monsanto P. A.

J. Richard Sayers has been appointed a purchasing agent for organic chemicals division, it was announced recently by Clayton A. Wolfe, director of the purchasing and traffic department of Monsanto Chemical Co., St. Louis.

Mr. Sayers, who has been a research chemical engineer for the division's research department, will be in the chemical raw materials section. A native of Hackensack, N. J., he holds a B.S. degree in chemical engineering from the University of Notre Dame (1945) and an M.S. degree in chemical engineering from Columbia University (1947). He joined Monsanto in 1947 as a junior chemical engineer and later became chief chemist at the company's Norfolk, Va., plant before transferring to St. Louis.

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SOAP PLANT Observer

By John W. McCutcheon

A RECENTLY published book, the *Properties of the Principal Fats, Fatty Acids and Waxes* by M. P. Doss of the Texas Co. has come to the writer's attention. This book is procurable directly from the above company at a price of $5.00. A recent review noted, did not quite cover the purpose and limitations of this book, and since soapers in general are always on the lookout for new information of this type it was decided to discuss the book here.

In the first place, the book is a compilation of physical and chemical data in tabulated form. This data is tabulated in a very convenient way and is dependent for the most part on prior published data. Since the Texas company's interest lies in the petroleum field, its interest is not confined to the normal acids generally associated with the soap industry. For example, data will be found on such acids as 2-ethyl hexanoic, isopropylisoamylacetic, pentadecanoic and 7 methyl-7-decenoic. The common fatty acids however, are equally well represented, such as oleic, elaidic, stearic and lauric.

Part 1, (Pages 1-51) covers *"Fats, Fatty Oils and Waxes."* Each page is devoted to one oil, fat or wax. At the top of the page is given the grades if any, and the fatty acid composition of the glyceride as determined from an authoritative source. Tabulated data are given, when available for specific gravity, flash, viscosity, melting point pour point, refractive index, saponification value, acid number, iodine value, acetyl number, Reichert Meissel number, and unsaponifiable and on the fatty acids, melting point titer, iodine value and acid number. The last column gives the source of data which is detailed in a bibliography at the end of the section.

Part 2 (Pages 52-107) covers *"Fatty Acids"* classed under three main headings (1) Monobasic (2) Dibasic and (3) Tribasic with appropriate subheadings. For example, monobasic acids are further subdivided into saturated, unsaturated, hydroxy and keto acids with further subdivisions where necessary. Individual acids are grouped for convenient location by the carbons in the chain. Behenic acid is found under saturated acids in the $C_{22}H_{44}O_2$ group. The tabulation makes provision for the following data on the acid, its methyl ester and its ethyl ester; specific gravity, melting point, boiling point, and refractive index.

Each entry is given its source reference by subscript numbers which refer to an extensive bibliography at the end of the section. Many spaces of necessity are void through lack of data. This does not detract however from the book's value, to the researcher who no doubt will add values of his own to the blank spaces as they become available to him.

Part 3 (Pages 113-229) deals with the "Salts of the Fatty Acids." These are classified under 31 principal metals, including ammonium, sodium and potassium. Each section is subclassified by chain length as before and, in addition, a number relates the acid to the corresponding acid in Part 2. Available data are classified under the headings, appearance, melting point, and solubility in acetone, water, benzene, ethyl and methyl alcohol, ether and petroleum fractions. As before, extensive literature references are given in a bibliography. The purpose of the book is to present facts, not to analyse them, and this must be kept in mind when evaluating its usefulness.

This book was shown to the writer in approximately its present form, four or five years ago by an official of the Texas Co. At that time it was used inter-departmentally. No doubt the interest of many people outside the company was a factor in its publication. It is printed beautifully on a very high quality paper and is a book one would be very proud to include in any library. The author must be congratulated for a monumental piece of work well done.

* * *

FOR the past several months, some consideration has been given the matter of soap boiling and glycerine recovery therefrom. It was shown that the amount of glycerine left in the soap is considerable and generally is many times the unknown loss. It is dependent on the method of boiling, lye space available and evaporation capacity, and will generally vary between four and 10 per cent although I have seen this loss reach 12 per cent in a fairly well run factory where all operations were analytically controlled. The unknown losses, however, are the ones which bother most soapers for some reason. They will work harder trying to get a 1½ per cent evaporation loss trimmed to 1¼ per cent than to get the soap boiler to change his operations sufficiently to recover four per cent left in soap. Something about the word *unknown* seems to terrify them, or perhaps secretly the soaper is afraid to investigate the boiling operations and feels that, anyway, leaving a little more glycerine in the soap makes it a better product! Whatever the reasons, however, let us examine more closely the glycerine losses in the evaporation and distillation department in the hope that an idea or two may be dropped that is new to the reader.

The manager of this department debits his account for so many pounds of 100 per cent glycerol received each month and credits it with crude or refined delivered to shipping

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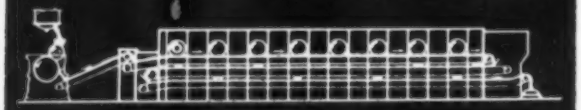

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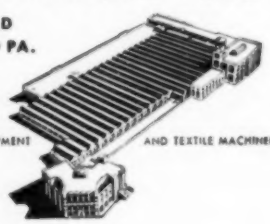

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or storage. The difference represents loss and may be divided into two parts: the known and the unknown losses. The idea is to categorize the known losses just as far as possible so that the unknown ones will be backed into an insignificant position, the theory being that the recognition of a known loss is the first step in controlling it. A few points where losses occur may be as follows:

1. In the volume of lye transferred;
2. In the glycerine analysis of such lye;
3. In the treatment;
4. In the evaporation;
5. In the crude glycerine analysis and transfer;
6. In the distillation;
7. In the drumming and transfer operations.

The losses that may occur in from one to four above, are very closely related to the type of fat stock used in the kettles and to the method of soap boiling used. When low grade stocks, such as foots and highly oxidized oils are used, analysis by the dichromate method is apt to be high due to the oxidation of soluble matter in the lye other than glycerine. As little a difference as 0.01 per cent represents an overall unknown loss of 0.2 per cent on a five per cent glycerine lye. Water soluble hydroxy acids in oxidized oils are not salted out and pass into the lye, giving them high foaming characteristics which makes evaporation very difficult, as in the point 4 above. The presence of rosin lyes will also have the same effect. The losses under such circumstances are very difficult to locate since they occur spasmodically with huge quantities of concentrated lyes going over the top of the evaporator within a matter of minutes. The operators hate to report these losses because they somehow feel that they are responsible for them, or will be so held.

If the lye is received hot it will contain higher than normal, quantities of dissolved soaps, which double or quadruple the losses of glyceride left in press cake just because of the larger volume of precipitated soaps which must be removed in the treatment. The use of large percentages of coconut, palm kernel or babassu oils will also have the same effect since their salts are more water soluble and difficult to salt out of even cold lyes. Hot lyes are harder to measure also due to their rapid change in gravity, so that item 1 may be affected in abnormal fashion. When the soap lyes are not used in counter current fashion, the lye volume is usually very high yielding a low five to eight per cent glycerine water. The very fact that more water must be removed in the evaporator increases possible losses at that point.

Losses such as those sustained in analysis and measurement, while adding confusion to the picture, are not in the same category as those preventable losses which occur through careless operation or lack of control, such as the glycerine in salt or press cake sent to the sewer, in leaking or overflowing tanks or broken pipe lines.

Next month we will try to conclude this discussion on losses and establish some sort of goal for which the small soaper may aim. In the meantime, let us not forget that glycerine production from soap lyes is gradually diminishing due to the activity of the fat splitters and synthetic detergent manufacturers. Glycerine very probably will never be in short supply again, however, since it is now being made synthetically from petroleum in quantities which represent close to 25 per cent of the entire U. S. production.

—— • ——

World Fat, Oil Output

World production (expressed in 1000 short tons of oil and fat equivalent) of animal fats and tallow was 2,235 in 1951, against 2,265 in 1950, and 2,160 in 1949, of lard 3,250 in 1951, 2,970 in 1950, and 2,780 in 1949.

Data for oils of palm origin were as follows: coconut oil in 1951, 2,285, compared with 1,990 in 1950 and 1,920 in 1949; palm kernel oil in 1951, 435 compared with 480 in 1950 and 445 in 1949; palm oil in 1951, 1,215 compared with 1,215 in 1950 and 1,165 in 1949. *Chemische Industrie*, April 1952, page 283.

French Soap . . .

(*From Page* 50)

and it is suggested that of France's forty-two million inhabitants only one in four buys a cake of soap a month, against American consumption of a cake of toilet soap per head per month.

Leading firms, such as Monsavon, are firm believers in extensive advertising through all available media, including technicolor "shorts". Monsavon claims that its sales have risen steadily since the war and that what losses have been registered in trade recently are largely in the cities and amply compensated for by the increased rural custom.

Present-day soap prices compare favorably with prices operative in other industries. An increase of twenty times pre-war prices is admitted in most commodities, sometimes more, while in the toilet soap industry increases of fifteen times pre-war prices are claimed, with no increases in 1951, when most prices rose considerably.

"The best I can afford" is the slogan of the French housewife of all classes. This is an all important selling point, particularly significant in the perfuming of soaps. A cheaply scented soap, even if of good basic quality, will immediately raise doubts among such a discerning clientele.

Monsavon has recently placed on the market a jasmin-scented soap, claimed to act as a lasting perfume after use, instead of being a transitory scent with no pretense to cling to the user.

In the field of packaging, novelties are the order of the day for shaving preparations as well as toilet soaps. There is a trend toward bowl packaging for the former, since this is claimed to be more economical and the soap can be used to the end with no unsightly stick-stump to be cast aside as waste.

—— • ——

New Barbasol Cream

A new brushless lather-type shaving cream was announced recently by Barbasol Co., Indianapolis. The item sells for 59 cents.

Production Clinic

(*From Page* 105)

This facilitates the cleaning time and results in more thorough cleaning. The machine is quickly converted to a shoulder type cleaner for stairways, narrow aisles, etc. Dirt collecting in other hard-to-get-at places such as motors, various machines and under desks and seats is accomplished readily. Bulletin 600 describes the machine fully.

Batching Meter

A METER that may be set wth a quick closing valve at any desired weight or volume of liquid is made by Neptune Meter Co., New York. This new meter comes in 1, 1½ and 2-inch sizes with capacities of from 5 to 100 g.p.m. A totalizer which gives a record of cumulative totals is provided. By the use of this device precise quantities may be metered, at even maximum temperatures, and uniform liquid measurements are assured.

Has New Antiseptic

A new antiseptic, which is readily soluble in carpet shampoos or floor cleaners of either soap or synthetic nature, has recently been announced by Signal Chemical Manufacturing Co., Cleveland. "Signal X-20" is said to stop odors arising from deterioration of rug shampoo residues, and to stop mildew on rug nap and carpet backing. It is especially recommended for on-location cleaning where residual dampness encourages bacterial growth. The product may also be used as disinfectant for rest rooms, floors, walls, etc., and for deodorizing garbage cans. According to the manufacturer the antiseptic is harmless to humans and pets.

Syndets . . .

(*From Page* 107)

the kerosene range, traces of the nitrogen and sulfur compounds present in the kerosene are carried into the final product giving it a disagreeable taste. By careful refining the product can be made acceptable for oral use, as in the case of the detergent "Nacconol FSNO".[1]

Non-ionic surface-active materials which have polyoxyethylene chains in the molecule are characterized by a bitter taste which persists for some time. One of the few exceptions is "Pluronic F68",[2] which is a wetting rather than a foaming agent. Made by condensing ethylene oxide with polyoxypropylene, it is said to be practically tasteless and non-toxic. The manufacturer suggests that it might be useful in the formulation of dentifrices despite its lack of foaming power.

Four surface-active agents are recognized by the Council on Dental Therapeutics of the American Dental Association for use in dentifrices. One is sodium lauryl sulfate, U.S.P., a detergent of high foaming power which has little taste. A patent granted in 1936 covered its use in a toothpaste containing sodium perborate. It is more compatible with the per salt than soap, which tends to cause its decomposition, and to be precipitated by it when the dentifrice is mixed with water. Another patent published in 1938 covers the general use of sulfated fatty alcohols in dentifrices.

Sodium lauryl sulfoacetate is another foaming agent listed among Accepted Dental Remedies of the A.D.A. This detergent is sold under the trade name "Lathanol LAL" (formerly Nacconol LAL[1]). It has a mild coconut-like odor and a slight acrid taste when dissolved in water. Aqueous solutions of "Lathanol LAL" are neutral or slightly alkaline and the detergent does not precipitate from hard water.

"Sulfocolaurate"[3] and "Aerosol OT"[4] are the remaining two detergents accepted by A.D.A. "Sulfocolaurate" is described as the potassium salt of the lauric acid ester of sulfoacetic acid amidified with beta-aminoethyl alcohol. A white crystalline powder, it is sparingly soluble in cold water and quite soluble in warm water. It is used in proportions of one to two percent as a foaming agent in dentifrices. "Aerosol OT" (dioctyl sodium sulfosuccinate) is a wetting agent rather than a foam producer.

Some of the problems encountered in the formulation of ammoniated dentifrices were solved by the substitution of synthetic detergents for soap. The products manufactured under licenses granted by the University of Illinois Foundation contain approximately three percent by weight of urea and five percent of dibasic ammonium phosphate. These compounds liberate ammonia when the dentifrice comes in contact with saliva in the mouth. If soap is incorporated in an ammoniated toothpaste, it may make the cream sufficiently alkaline to cause the premature release of ammonia while the paste is in the tube. The use of a synthetic detergent prevents this type of deterioration and increases the effectiveness of the dentifrice as a result of the penetrating action of the detergent. The following formula for an ammoniated dentifrice specifies "Lathanol LAL" as the foaming agent: tricalcium phosphate, 26.67; glycerin, 45.4; water, 15.4; peppermint flavoring, 0.58; gum tragacanth, 0.96; saccharin ,01.; "Lathanol LAL", 2.89; dibasic ammonium phosphate, 5.0; and urea (100 mesh), 3.0. This formula is covered by U. S. patent 2,588,992.

Two other detergents, apart from the above-mentioned surface-active agents included in Accepted Dental Remedies, are mentioned as ingredients of dentifrices. The sulfated monoglyceride of coconut fatty acids is marketed under the trade name "Arctic Syntex M".[5] Its use in a dental cream is protected by U. S. patent 2,236,828. "Santomerse B",[6] is a foaming agent, said to be a salt of the lauryl ester of meta-sulfobenzoic acid. It is covered by U. S. patent 2,359,291. The lauryl group of this detergent is derived from coconut oil and accordingly the material does not have the disagreeable taste characteristic of the alkyl aryl sulfonates which are alkylated with kerosene hydrocarbons.

[1] National Aniline Div., Allied Chemical & Dye Corp., New York.
[2] Wyandotte Chemicals Corp., Wyandotte, Mich.
[3] Emulsol Corp., Chicago.
[4] American Cyanamid Co., New York.
[5] Colgate-Palmolive-Peet Co., Jersey City, N. J.
[6] Monsanto Chemical Co., St. Louis.

Sanitary Chemicals Section

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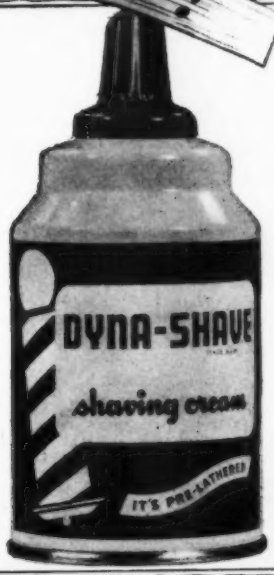

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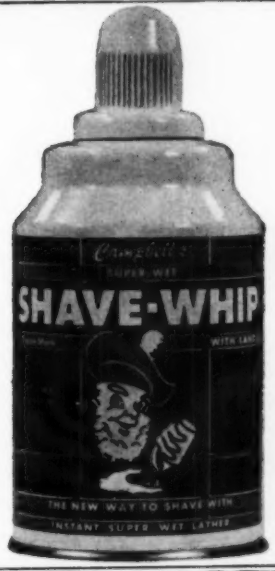
Mennen Co., Newark, N. J.

Consolidated Royal Chemical Co., Chicago, Ill.



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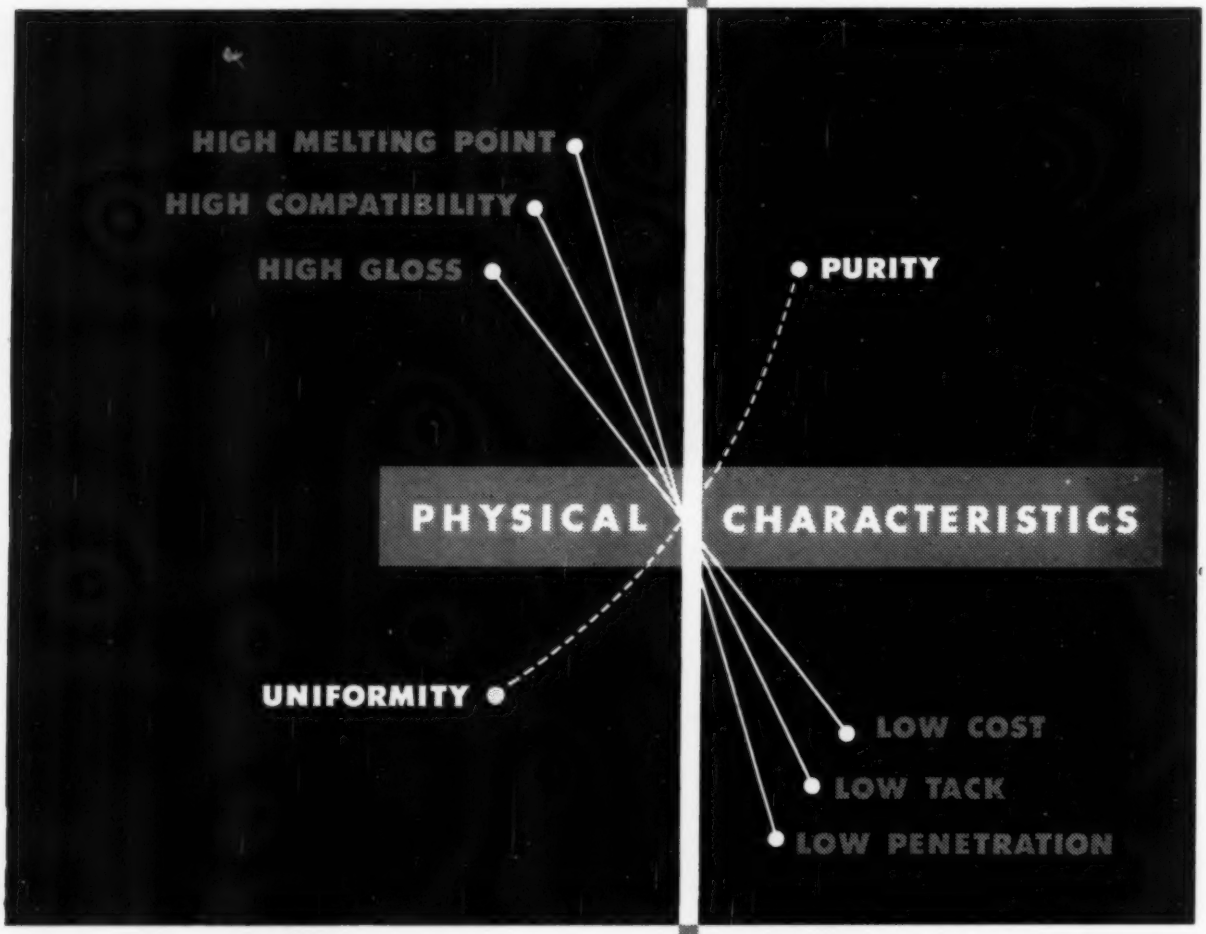

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700	190/195	5 max.	2 to 2½	Nil	Nil
1035	195/200	2 max.	2 to 2½	Nil	Nil
★ 23	180/min.	4 to 6	4 to 5	20-25	55-65
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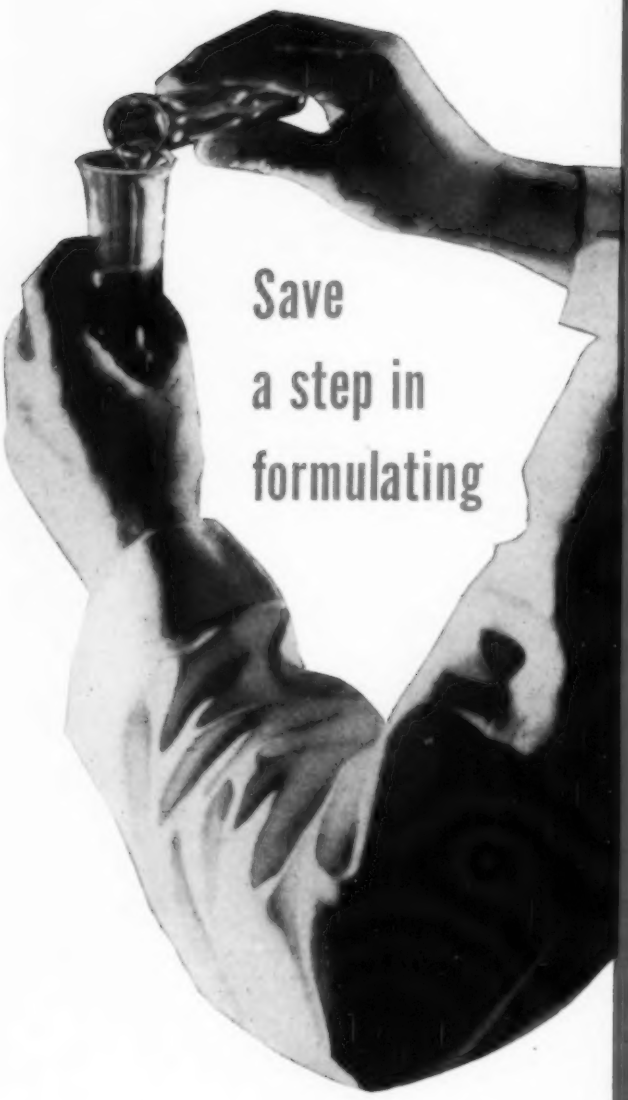

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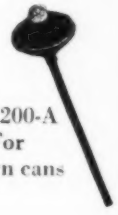

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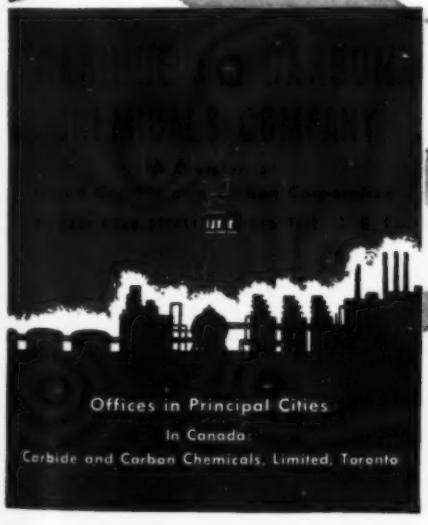

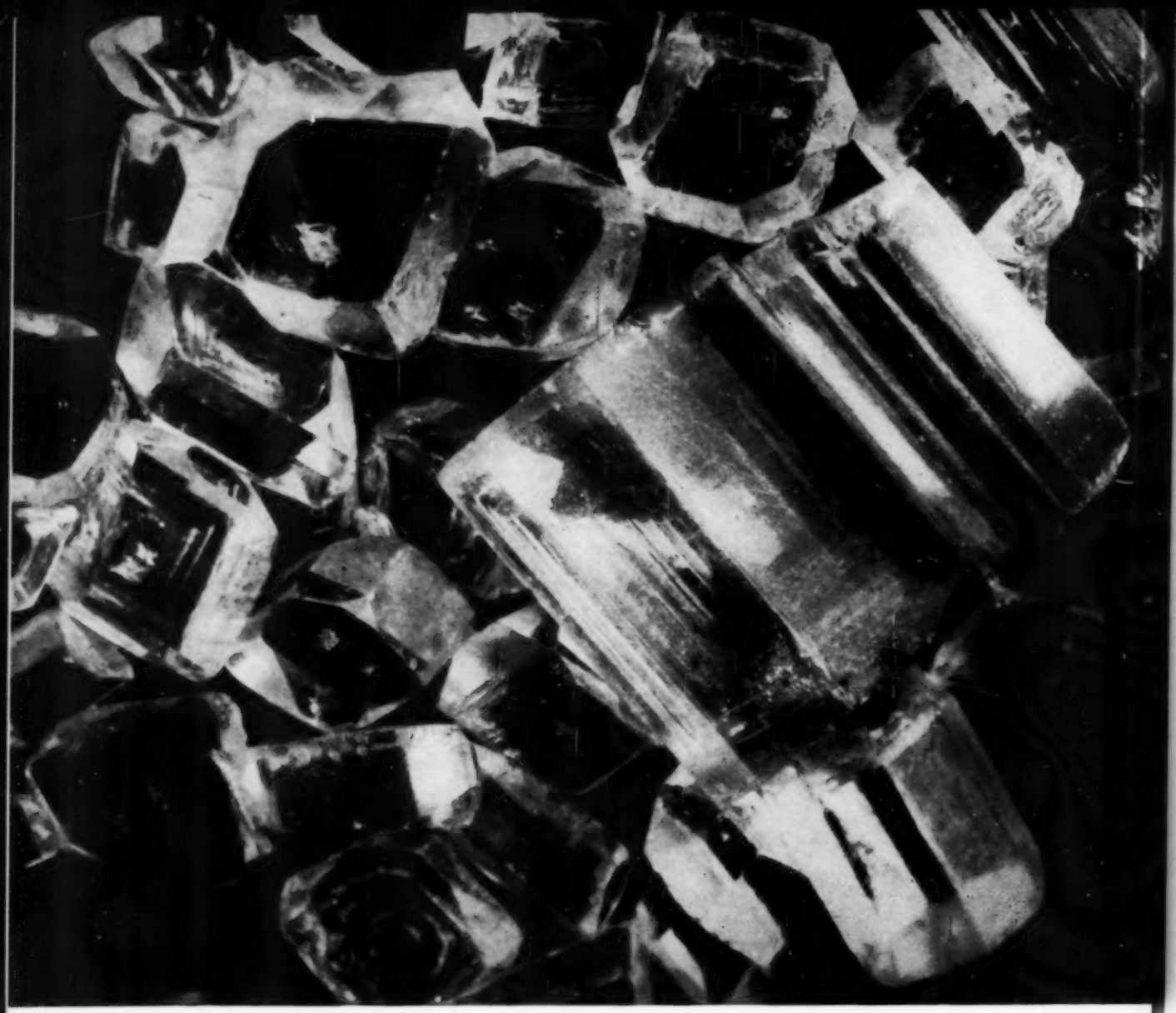

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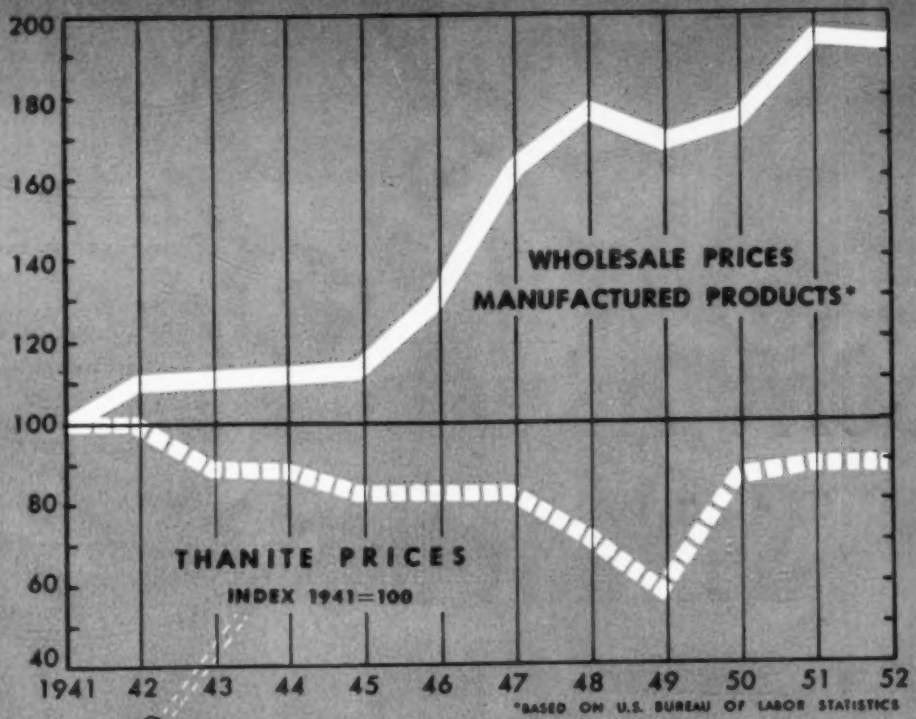

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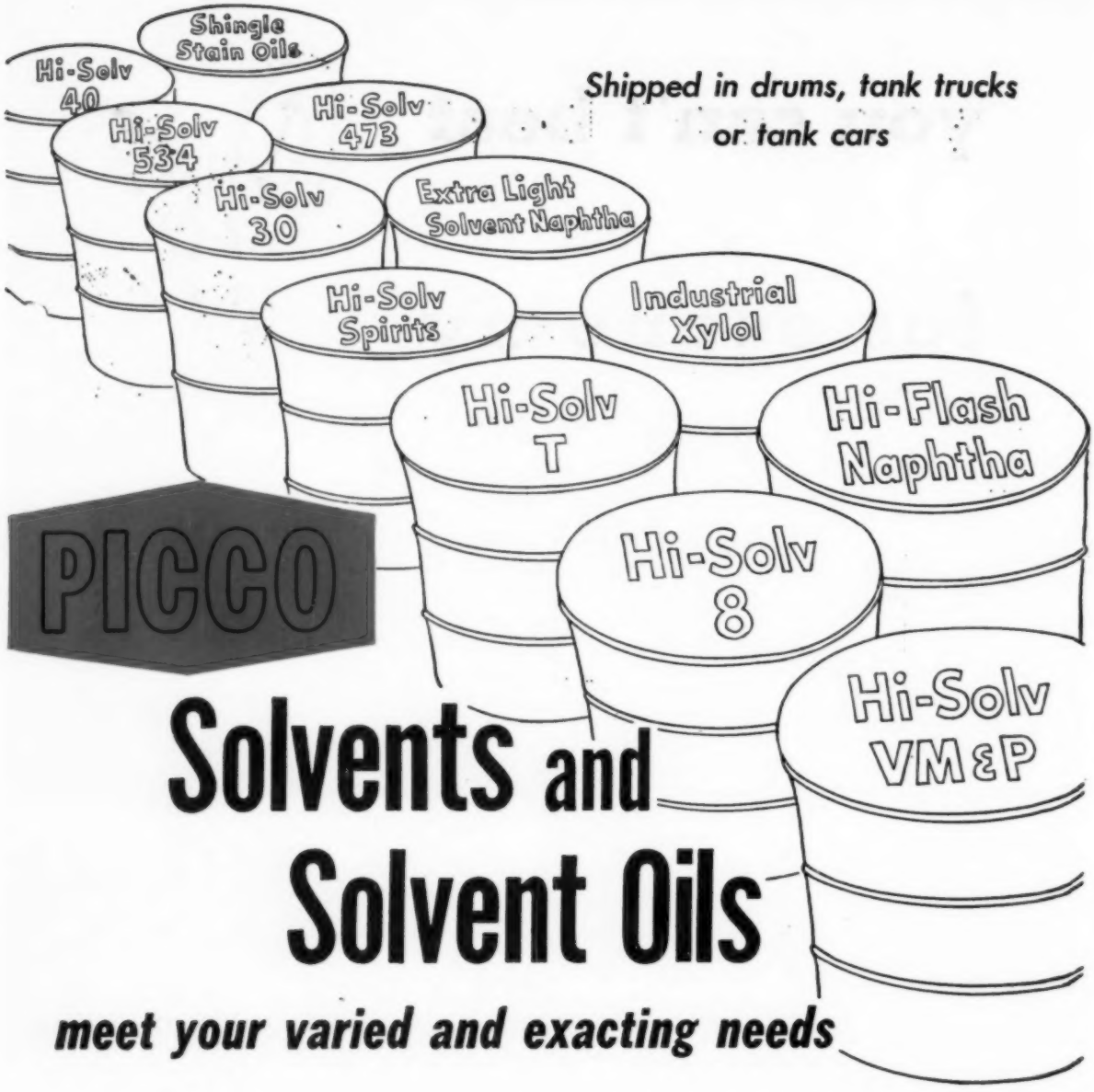

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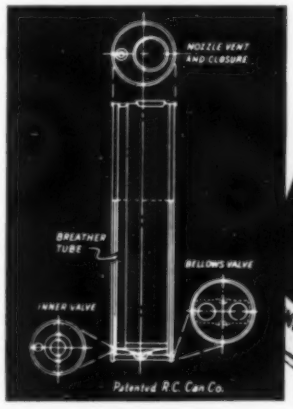

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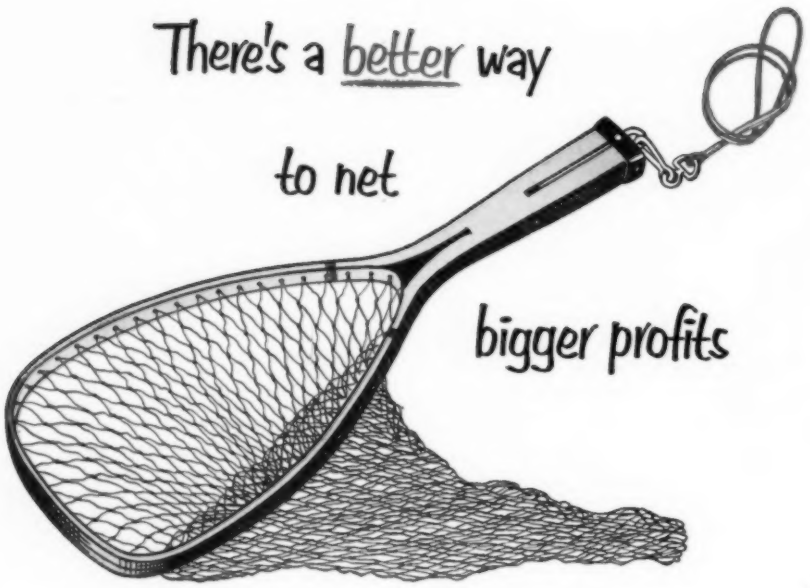

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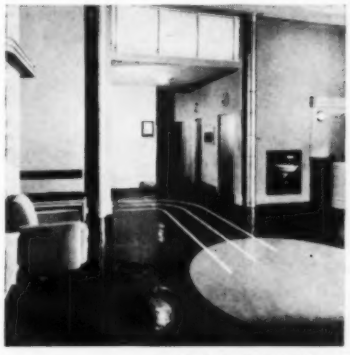

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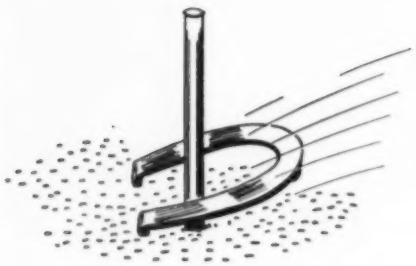

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Selling Insecticides to Food Plants

By R. T. Orr*

Diversey Corp.

VAST improvements have been made in the quality of insecticides for industrial use in the past few years by the insecticide industry. These improvements have in part been brought about by the development of better techniques for testing, both chemically and biologically. In addition to the improvements that have been made in the effectiveness of insecticides, we must also recognize that there have been some novel developments in insecticide application. These have proven to be a boon to the user and to the industry; because while we all know that it is essential to have a good, high quality insecticide, it is also a fact that even a good insecticide can only be as effective as its ability to get to all parts of a given area uniformly to do its work. The kind and type of insecticide applicator used, therefore, is most important.

A very practical system for applying space type insecticides was introduced a few years ago, which has proven to be very effective and which is in wide use among food processing plants of all kinds throughout the United States and Canada today. The system consists of a vaporizer unit which operates equally well with air or steam pressure. The vaporizers are installed permanently at the ceiling approximately 35 feet apart, using one unit for each 25 to 35,000 cubic feet of space. The insecticide is broken down into a fine fog or vapor, developing a 17 micron particle size. This enables the insecticide in a short time to cover every part of a given area with a minimum of time, labor and material. There is no waste of material, and all of the kill power inherent in the insecticide is utilized. Penetration into cracks and crevices is achieved because of the development of insecticide particles of the right micron size. Crawling insects are driven out and die quickly and flying insects are knocked down and killed rapidly.

Complete, fast coverage, eliminates the possibility of migration of the insects from one part of a plant to another. Treatment is made usually when processing hours are over and manpower involved is very limited. All that is required is for one man to turn on a valve, start the vaporizers operating and to turn it off when the job is completed. Any area, regardless of size, may be treated in a matter of minutes. Operating costs are low and the expense involved in making the original installation is more than offset by the considerable savings in material, time, labor, efficiency and effectiveness of the coverage attained.

Recently other fine dispensers have been developed with which we are all familiar. Waiving any reference in this discussion to controversial views concerning the suitability of residual insecticides in food processing establishments, it is recognized that there are two general methods of insecticide application: direct and vaporization. The latter is a relatively recent development. The advancements in products and application are fine achievements, but what kind of a job has the insecticide industry done to impress users on the consistent and proper use of insecticides? As a whole, I think a very poor one.

Food Plants Need Guidance

MANY food plants are badly in need of help and guidance on the use of insecticides. Recently I heard a representative of the Food & Drug Administration tell an audience that last year more than eight million pounds of food products were ordered destroyed because of the presence of insect fragments, insect webbing and insect excreta. This represents a staggering loss in both product and dollars to say nothing of the substantial fines usually assessed. These product condemnation cases are listed and published by the Federal Security Agency of the Food & Drug Administration.

Many times local newspapers get hold of these cases and give them wide publicity with top headlines. The results of this type of adverse publicity are very bad and are bound to affect the sales of the plant, which through lack of knowledge or through plain carelessness allows a situation like this to arise.

Such conditions can and must

The insecticide industry has an educational selling job to do to aid the food industry in setting up sound insect control programs.

* Paper presented before 38th mid-year meeting, C.S.M.A., Boston, June 9, 1952.

be corrected, but first and most important, plant management and personnel must be thoroughly sold on the primary importance of strict insect control in the operation of any modern up-to-date clean food plant.

It is my conviction that the insecticide industry, has an educational selling job to do. We can aid the entire food industry materially by working closely with management and personnel, to assist them in setting up and carrying through intelligent insect control programs. We can help to reduce the enormous losses sustained each year. All of our promotion and advertising should be focused on and pointed at the necessity for all food industry plants to consider insect control as important as any other cleaning and sanitation operation.

Those of us who have had the experience of selling insecticides to food plants, the minimum consumption of which should be two or three times as much in a year if used with any degree of regularity, have found upon calling back the following year that less than half of the supply had been used. Sometimes it has been discovered that the insecticide containers had never even been opened.

No insecticide can kill insects while it is in the container. Plants cited above are examples of poor original selling jobs. Instead of just selling the supply of insecticide and getting on to the next call, wouldn't everyone have benefited a great deal more if the salesmen had sold the necessity and importance of regular use, and emphasized that insect control is an essential part of good housekepeing in the food plant?

Heretofore, insect control has been regarded by most food plant management as a seasonal activity, limited by the appearance of insects. A more enlightened approach has demonstrated that insect control is definitely an all year undertaking. Food plants which have adopted a regular, scheduled program have found that routine scheduled activity need not be so intensive as is required when treatments are sporadic and governed only by the appearance of insects. In other words, a strict program of regularly scheduled treatment should be adopted regardless of whether any insects are ever observed in a food plant. This is just plain management common sense. This is the emphasis which should be placed on our educational activities in insect control.

The ever-increasing activities of Pure Food and Drug Administration and the health department throughout the U. S. in the elimination of insects wherever food products are processed, has given the insecticide industry a real opportunity—a new impetus to increase sales. What are we doing to capitalize—to build sales for ourselves and at the same time benefit the food industries? That is the question, and I think it is well worth our most serious study and consideration.

Self-sterilization of human skin

HUMAN skin lipids with particular reference to the self-sterilizing power of the skin is the subject of a paper by C. R. Ricketts, J. R. Squire and Elizabeth Topley, with the technical assistance of H. A. Lilly. The work was undertaken on behalf of the Medical Research Council, in the industrial Medicine and Burns Research Unit, Birmingham Accident Hospital. According to the authors the skin is known to have the property of destroying many species of micro-organisms on its surface. The presence of free fatty acids on the skin can also be readily demonstrated. Experimental evidence has been brought forward to show that the self-sterilizing properties of skin depend partly upon this coat of long chain fatty acids. Recently however many alternative theories have been discussed, stressing the numerous variables involved. A fresh attempt, therefore, has been made to determine the nature of the lipid mixture which can be extracted from the surface of human skin, to define more closely *in vivo* the self-sterilizing power of the skin (and its limitations) and to correlate these results by testing *in vitro* the disinfecting action of the fatty acids found.

Summary of procedure and conclusions includes the following points: Acetone extracts of the surface of human forearms have been analyzed with particular reference to the free fatty acid fraction. X-ray powder photography of a barium salt has shown that an appreciable quantity of oleic acid is present. The fate on human skin of *Streptococcus pyogenes, Staphylococcus aureus, Bacterium coli, Pseudomonas pyocyanea, Chromobacterium prodigiosum,* and skin resident micrococci has been observed under occlusive dressings which prevent or permit natural drying. *Strep. Pyogenes* disappeared within one day, *Staph. aureus* within three days, regardless of whether drying was prevented or permitted. The gram-negative bacilli disappeared in one day if drying was permitted, but persisted on the skin if drying was prevented. Albumin treatment reduced the rate of disappearance of *Strep. pyogenes* and of *Staph. aureus* on human skin. Acetone treatment reduced the rate of disappearance of *Strep. pyogenes.*

A number of species used in the experiments on human skin have been tested *in vitro* for their sensitivity to oleic acid, skin unsaturated, and other fatty acids. The sensitivity of *Strep. pyogenes, Staph. aureus and* micrococci to the unsaturated fatty acids was shown to run parallel with their rate of disappearance on moist or dry skin. The organisms which failed to disappear on skin when drying was prevented (*Ps. pyocyanea* and *Bact. coli*) were extremely resistant to fatty acids *in vitro.* The results are discussed with particular reference to the role of skin unsaturated fatty acids and drying in self-sterilizing action of the skin. It is concluded that for *Strep. pyogenes* the major factor is the action of unsaturated fatty acids, probably oleic acid; for *Ps. pyocyanea* and *Bacterium coli* the major factor is drying; for *Staph. aureus* both unsaturated fatty acids and drying have a demonstrable influence.

Other recognized human pathogens show *in vitro* a degree of sen-

(*Turn to Page* 183)

Iodine as a Bactericide

By Cecil W. Chambers, Paul W. Kabler, George Malaney and Alton Bryant

Bacteriology Section, Environmental Health Center, Public Health Service, Cincinnati.

IODINE has been used for sterilization of small quantities of water for many years (1). Anderson (2) refers to a carefully controlled field evaluation by Nesfield in 1904 in which one half gram of iodine per gallon was used. Recently, there has been considerable interest in iodine as a bactericidal agent for use where larger volumes of water are to be treated (3, 4). There is some evidence to indicate that iodine may be less irritating to the mucous membranes than chlorine (5). This has stimulated interest in its merit for use in swimming pools.

There have been many reports regarding the use of iodine for sterilization of water, almost all of which were concerned with emergency treatment of small volumes. Iodine concentrations have frequently ranged from 5 p.p.m. upward, and there are no indications that the iodine level remained constant throughout the duration of an experiment. A few references, representative of the early and recent investigation of the use of iodine in water disinfection are listed (1, 2, 6, 7, 8, 9, 10).

There is a paucity of information relative to the use of iodine under conditions paralleling chlorination in water works and swimming pool practice. Beckwith and Moser (11) appear to have been the first to make such an investigation, but they were hampered by the lack of a satisfactory method for the quantitative determination of low iodine residuals. In their work the effects of pH and temperature were not determined. They worked with concentrations as low as 0.10 p.p.m., based on adding a calculated amount of iodine. The results, in terms of bactericidal efficiency, indicate that the test water had an iodine demand.

Marks, Ridge and Strandskov (5), using improved analytical procedures, studied the bactericidal effect of low iodine residuals, in a dual role with chlorine. However, the effect of iodine by itself could not be determined under these conditions.

The purpose of the investigation reported herein was to provide information which would assist in evaluating iodine as a bactericide for use in water treatment. The study was specifically designed to determine under closely controlled conditions, the degree to which the bactericidal action of iodine is influenced by variations in exposure time, concentration, pH, and temperature. Studies included one or more species of *Escherichia, Aerobacter, Salmonella, Shigella* and *Streptococci.*

Methods

PREPARATION OF GLASSWARE — Flasks for use in bactericidal tests were cleaned with concentrated potassium dichromate cleaning solution. Routine laboratory cleansing procedures were adequate for all other glassware. Contact with the cleaning solution must be of sufficient duration to oxidize all traces of organic residue *which are definitely not removed by ordinary cleansing methods.* Thirty minutes contact with the cleaning solution has proven satisfactory with Pyrex glassware.

The cleaning solution was prepared by grinding potassium dichromate crystals to the fineness of flour and dissolving 120 gm. of potassium dichromate in one liter of C.P. sulfuric acid. This amount of finely ground potassium dichromate readily dissolves in one liter of concentrated sulfuric acid whereas crystals do not. Cleaning solutions prepared from aqueous potassium dichromate solutions will not remove chlorine demand completely from glassware. Glassware was thoroughly drained before contact with cleaning solution to prolong the effective life of the solution. Following treatment the flasks were rinsed 10 times with tap water using "fill-and-drain" procedure. Flasks were completely filled each time and thoroughly drained after each rinse. Subsequent rinses with distilled water were continuous and generous volumes of water were used, followed by complete drainage. Inadequate rinsing may result in demand losses due to residual dichromate and may also cause a reduction in the population in the water control flask. Henry and Smith (12) experienced such difficulties with dichromate cleaning solution. Flasks for bactericidal exposures were sterilized in the hot air sterilizer because steam sterilization imparted an iodine demand, presumably carried in the condensate. Standard methods (13) were followed in all other procedures pertaining to the preparation and sterilization of equipment, media and measurement.

Preparation of iodine solution —Stock iodine solution was prepared by dissolving 500 mg. of iodine crystals in 300 ml. of 95 percent ethyl alcohol and diluting to one liter with distilled water. All iodine concentrations were determined by amperometric titration. This method is subject to several limitations when the practical aspects of its use with iodine are con-

sidered. In preliminary investigations of the amperometric method, as applied to testing iodine residuals (14), it was shown that an accuracy of ± 0.01 p.p.m. was attainable when a series of parallel aliquots were rapidly titrated. Even in a chlorine-demand-free water, there was an uncontrolled conversion of iodine to iodides and iodates. The rate of this conversion in a given buffer system, accelerated as pH increased. This loss, rather than the accuracy of the method was the limiting factor in the control of the iodine concentration.

Under the conditions of this study a minimum of 15 minutes elapsed between the start of the initial and final iodine titrations. The iodine loss in this time ranged from 0.01 p.p.m. to 0.05 p.p.m. The lowest iodine concentration considered for use in the bactericidal studies was 0.20 p.p.m. because the possible error of ± 0.05 p.p.m. (± 25 percent) was considered the maximum tolerable.

Preparation of iodine-free, chlorine-demand-free water — The problem of preparing a satisfactory test water paralleled that noted in chlorine studies (15). Chemically iodine is less active than chlorine. Therefore, a chlorine-demand-free water should be iodine-demand-free.

Test water was prepared by adding three to five p.p.m. of chlorine to five gallons of distilled water, and storing at room temperature for several days. On the day preceding the test, the specified amount of buffer was added to five liters of this water which was then transferred to a six liter Erlenmeyer flask, and boiled for one minute. After cooling, the chlorine was neutralized with freshly prepared 0.2 percent sodium sulfite solution to a 30 second residual endpoint of approximately 0.005 p.p.m. determined by the orthotolidine test in a color free nessler tube containing a 100 ml. test portion. The water was then boiled for 20 minutes and cooled. Immediately before use a 100 ml. aliquot was removed aseptically and tested for chlorine. A satisfactory water should show a discernible trace of color which develops within less than 30 seconds, when compared with a distilled water blank containing a test portion of orthotolidine. If there is any doubt whatever concerning the presence of a trace of chlorine in the distilled water, it should be filtered through activated carbon prior to use in the blank. Orthotolidine was used for chlorine demand tests because it is sensitive to trace amounts of chlorine whereas the amperometer is not.

Preparation of buffers — Palitzch's (16) borate buffer was found to be satisfactory for use at pH 7.5, 8.5, and 9.15. Palitzch's stock sodium borate solution, designated "A", contains 19.108 gm. of borax per liter. The boric acid-sodium chloride solution, designated "B", contains 12.404 gm. of boric acid and 2.925 gm. sodium chloride per liter. The following combinations of stock solutions produced the hydrogen ion concentrations indicated when added to one liter of distilled water.

Solution "A" ml.	Solution "B" ml.	pH
10	....	9.15
5	5	8.5
1.5	8.5	7.5

To secure pH 6.5, a dilution of Sorensen's (16) citrate buffer was used. Stock buffer solutions were prepared as follows: To 21.008 gm. of citric acid, 200 ml. of N/1 sodium hydroxide were added and diluted to one liter with sterile distilled water. This was designated stock solution "C". Stock solution "D" was sterile N/10 sodium hydroxide solution. The proportions used were 12 ml. of stock solution "C" and eight ml. of stock solution "D" per liter of water. Because the sodium citrate decomposed sufficiently during boiling to produce an iodine demand in the water, stock buffer was prepared aseptically and added to the iodine-free chlorine-demand-free water after 20 minutes of boiling.

The pH of each lot of test water was determined by electrometric methods, initially, on an aliquot of the bulk water, and finally, on a portion from each individual test flask following removal of the final bacteriological test portion.

Bacteriological methods — The number of culture transfers between initial isolation and use of a culture for bactericidal tests was kept to a minimum because there is evidence in the literature indicating the possibility of shifts in resistance following isolation (17). Designations such as C-36 and P-7 refer to strains in the Environmental Health Center stock culture collection. Test suspensions were prepared from cultures incubated 18 to 24 hours at 37°C. on nutrient agar slants. They were transferred daily for three days before initial use and were transferred each day when used in successive experiments. They were stored in the 20°C. room when not being tested. The test suspension was prepared by transferring 2 ml. of sterile buffered bacterial dilution water (13) to an 18 to 24 hour agar slant culture of the test organism. Growth was dislodged from the slant by rubbing gently with a pipette, being careful not to tear the agar. This concentrated suspension was transferred to a 99 ml. dilution blank and thoroughly shaken, allowed to stand undisturbed for from two to five minutes, following which 0.6 ml. to 3.0 ml. were transferred to a similar blank. The amount transferred depended on the growth characteristics of the culture and was adjusted to provide a final test concentration of approximately 1000 to 1500 bacteria per ml. when one ml. of suspension was added to a test flask.

The bacterial content was determined by the nutrient agar plate method (13). From the control flask, immediately after the suspension was added and mixed, six replicate plates were inoculated with 0.1 ml. quantities. During the early stages of the study a similar set of six plates was planted after five minutes exposure. In later experiments the final plant from the control flask was delayed until the conclusion of the experiment, (30 to 90 minutes). Sterility controls were maintained on all media, water, thiosulfate solution, buffer, and equipment used. After one, two, and five minute exposure intervals, 10 ml. from each flask containing iodine were added to an equal volume of sterile N/40 sodium thiosulfate solution. Duplicate two ml. quantities were planted in agar plates from each neutralizer tube. Preliminary tests established the neu-

tralizing efficiency and freedom from toxicity of this procedure. Plates were periodically incubated for longer intervals to verify that growth-lags had not affected the results. The identification of surviving organisms was established by transferring to differential media.

Test Procedures

FOR experiments with non-pathogenic bacteria, 500 to 800 ml. aliquots of sterile iodine-free chlorine-demand-free water, were added to each of several consecutively numbered one liter Erlenmeyer flasks. The number of flasks in the series was determined by the number of iodine concentrations to be studied which was usually from four to eight.

Flask 1 initially contained 800 ml. of test water. A calculated amount of stock iodine solution was added to this flask and three 100 ml. aliquots were removed for a preliminary titration to establish the exact concentration of the stock iodine solution. A thermometer was inserted into the remaining water which was retained as a temperature control.

Flask 2 contained 500 ml. of test water. To this flask one ml. of bacterial suspension was added. This was the flask from which the initial and final water controls were planted, the initial serving to establish the density of the test suspension used while the final was used as a toxicity check.

Flask 3 and succeeding flasks, received 800 ml. of test water followed by an amount of stock iodine solution calculated, on a basis of the preliminary titration, to result in the desired test concentration. This concentration was immediately verified by removing three 100 ml. aliquots for an iodine determination. Upon confirming that the iodine concentration was satisfactory, one ml. of bacterial suspension was added to the flask and mixed thoroughly. One, two, and five minutes after adding the culture suspension, 10 ml. aliquots were

Table I

Average p.p.m. Iodine Required to Kill All Test Bacteria

Culture	Exposure time in minutes	2°C — 5°C.				20°C. — 26°C.			
		pH 6.5	pH 7.5	pH 8.5	pH 9.15	pH 6.5	pH 7.5	pH 8.5	pH 9.15
E. coli C-36	1	1.9	2.0	2.0	2.8	0.5	0.69	0.7	0.67
	2	*<1.5	<1.0	<1.4	1.8	0.27	0.43	0.5	0.53
	5	<1.2	<1.0	<1.4	<1.7	0.20	0.25	0.2	<0.4
E. coli C-37	1		1.4		2.7		0.8		0.8
	2		1.0		1.8		0.4		0.5
	5		<0.7		<1.6		0.27		<0.3
A. aerogenes A-43	1		0.9		3.3		0.6	0.5	0.8
	2		0.7		1.9		0.4	0.4	0.4
	5		0.4		<1.5		0.25	0.2	0.2
S. typhosa P-4	1		0.7		0.8		0.47		0.7
	2		0.4		0.6		0.33		0.47
	5		<0.4		<0.4		0.20		0.27
S. typhosa P-5	1		0.7		0.9		0.47		0.47
	2		0.4		0.6		0.27		0.27
	5		<0.4		<0.4		0.20		0.20
S. typhosa P-10	1		0.87		1.13		0.4		0.47
	2		0.53		0.80		0.33		0.33
	5		<0.53		0.66		0.20		0.20
S. paratyphi P-2	1		0.85		1.27		0.53		0.65
	2		0.50		0.87		0.4		0.40
	5		<0.40		<0.8		0.2		0.2
S. schottmuelleri P-3	1		1.2		1.3		0.6		0.67
	2		0.75		0.93		0.4		0.47
	5		<0.65		<0.8		0.2		0.27
S. typhi-murium P-6	1	1.33	1.67	1.70	2.27	0.4	0.93	0.8	1.0
	2	0.87	<1.27	1.25	<1.4	0.27	0.73	0.6	0.8
	5	<0.8	<1.27	<1.25	<1.4	0.20	<0.6	<0.47	<0.53
S. flexneri P-7	1		2.6		3.5		0.67		1.0
	2		<2.0		<2.7		0.40		0.6
	5		<2.0		<2.5		<0.27		<0.4
S. dysenteriae II P-8	1		1.33		2.10		0.55		0.87
	2		<0.93		1.5		0.40		0.66
	5		<0.93		<1.5		<0.35		<0.27
S. sonnei I P-9	1	1.66	2.47	2.16	4.33	0.6	0.6	0.87	1.0
	2	<1.5	1.7	1.40	<3.5	0.33	0.35	0.73	0.67
	5	<1.2	<1.57	<1.40	<3.5	0.20	0.20	<0.6	<0.53
S. fecalis E-40	1		2.37		3.0		0.70		1.4
	2		1.62		2.17		<0.55		1.0
	5		<1.0		<1.83		<0.45		<0.8

* The "<" indicates that one of 3 or more observations is of undetermined value less than the known observations.

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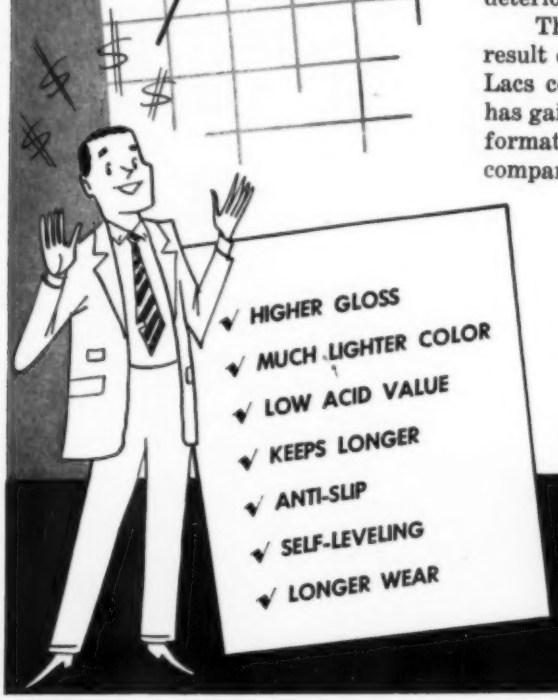

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removed, discharged into neutralizer tubes, and mixed violently. From each flask, at the end of the five minute exposure interval, three 100 ml. aliquots were titrated to determine the final concentration of iodine. The final pH determination was also made at this time.

Because of spray and contamination hazard, it was unsafe to use the amperometric titrator on samples containing pathogens. For experiments with pathogenic bacteria certain variations in the procedure therefore were necessary. Flasks 1 and 2 were prepared and treated in the same manner as the corresponding flasks in a test using non-pathogenic bacteria. Flasks 3 and all successors were of the two liter Erlenmeyer type and initially contained 1300 ml. of test water. An amount of stock iodine solution calculated to give the desired concentration was added to the 1300 ml. of test water and three 100 ml. aliquots were withdrawn for an initial iodine determination. The remaining 1000 ml. were split by aseptic transfer of 500 ml. to a correspondingly numbered 1 liter Erlenmeyer flask. This provided duplicate 500 ml. quantities. These duplicates were maintained in parallel, with respect to time, temperature, and agitation, throughout the experiment but no bacteria were added to one flask in the pair. The one liter flask containing 500 ml. was treated exactly as the flasks in the experiments with non-pathogens. The 500 ml. portion remaining in the two liter parent flask provided a safe source of material for final iodine and pH determinations.

Variable conditions were controlled for each determination within the following limits:

Iodine content varied not to exceed 10 percent of initial value.

pH was held within $\pm$ 0.3 of desired level.

Temperature ranges were 2°C. to 5°C. and 20°C. to 26°C.

Results

THE decrease of the bacterial populations in the "test water" toxicity controls never exceeded 32 percent of the initial count. In only five experiments did the decrease amount to 20 percent or more. In Table I, the results of 224 experiments are summarized. Results of tests with all the strains at pH 7.5 and 9.15 at temperature ranges of 2°C. to 5°C. and 20°C. to 26°C. are shown. Results with the most resistant species of each genus, i.e., *E. coli* C-36, *S. typhimurium* P-6 and *S. sonnei* I P-9 at pH 6.5 and 8.5 are also included.

The values listed in Table I are averages of three or more experiments, with one exception. The values given for *S. typhosa* P-10 at pH 7.5 and temperature of 2°C. to 5°C. are averages of two experiments.

The average amounts of iodine required to produce a complete kill in one minute are presented graphically in Figures 1 and 2. There was considerable variation in the amount of iodine required to kill the various strains and species tested. The strains of *S. typhosa* appeared to be most sensitive and *S. sonnei* I the most resistant.

Results of four experiments not apparent in Table I indicate that the three species of *Shigella* became less resistant to the action of iodine during the period of study. The *Shigella* strains were freshly isolated when initially tested. After a period of approximately six months on artificial media, the average iodine concentration required to kill was approximately 60 percent of that re-

(*Turn to Page* 163)

Figure 1

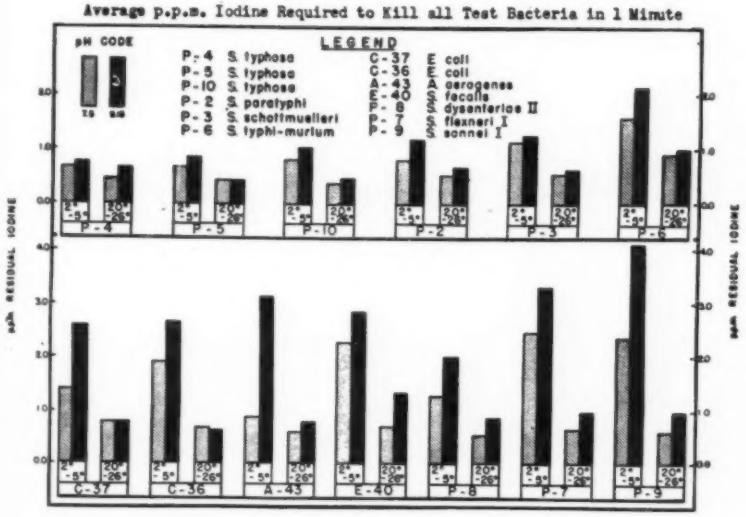
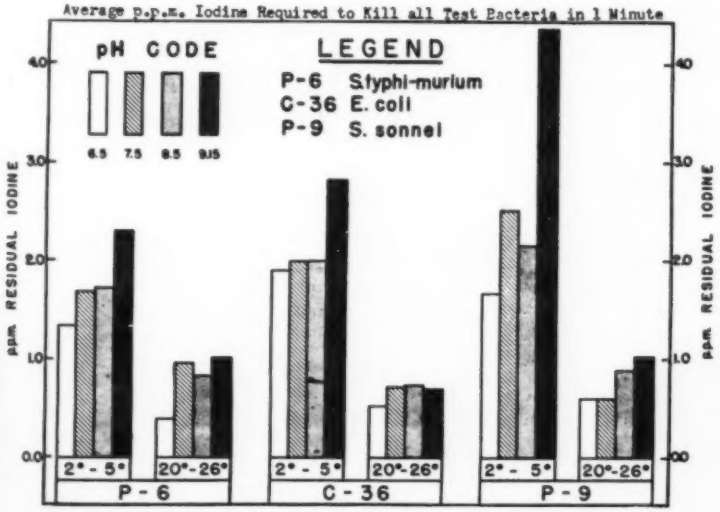


Figure 2



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Everything but the Janitor

N. Brittingham and Sons, Philadelphia sanitary supply firm, feels emphasis on completeness of its line is the best selling approach

By Phil Lance

"WE carry everything but the janitor"—is the slogan of N. Brittingham and Sons, a Philadelphia sanitary supply jobber. This slogan is as old as the business itself and when the present owner took over the enterprise just about a year ago, the slogan remained.

"I don't think that there is a better way of telling customers and prospective customers that we carry everything in the janitorial line," says Joseph Korhandler, "and we emphasize this slogan on all our stationery, correspondence, labels and other literature and promotional material carrying the Brittingham name."

Mr. Korhandler took over ownership of this enterprise about a year ago. The assets included a small but well established business, a reputable name in the field and a three story building with about 7500 square feet of storage area. As the new owner of a business, Mr. Korhandler decided to make contacts in the field and to try to expand existing business opportunities.

Because the firm handles a complete line of merchandise, ranging from small whisk brooms to floor polishers, he felt that he had sufficient merchandise to promote a variety of monthly specials among his regular customers in an effort to build up greater buying from current customers.

"My idea is first to get the greatest amount of business from customers already on your books and then to go out after new trade," says Mr. Korhandler. "As it is almost impossible for a salesman to start calling off all the items that a regular customer may be interested in, we decided to make up a special monthly mailing list that would enhance the interest of our customers in our other products."

Direct Mail Promotions

EACH month, the firm mimeographs a list of products at special prices that act as inducements to regular customers to make added purchases. The list of products is made up by checking all the items used by the office buildings, industrial plants, retail establishments, schools, churches, hospitals and other institutions, and others who are regularly served.

The idea is that what one firm buys and uses very likely is a product that another customer may be able to use. Thus, every month a list of about a dozen items is printed and mailed out to regular customers.

"Because we hold down our list of items to about a dozen, it is very easy for us to call them to the attention of a customer after we have taken their regular order," relates Mr. Korhandler. The special prices help to influence buyers and in the majority of instances, extra products are sold."

By repeating this effort month after month, Mr. Korhandler has been able to increase the purchases by his customers over 50 per cent in many instances. The special price is only used once and then as an introductory feature. After that the product becomes one regularly asked for by the customer.

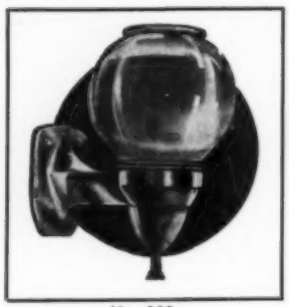
JOSEPH KORHANDLER

Mr. Korhandler and a salesman cover the present list of customers. The salesman works on a straight commission basis and is constantly in the field. Mr. Korhandler spends a portion of his time in the field and a part in his office so that he can keep track of all his business operations.

Customers are called upon weekly, monthly and at other established intervals. Names of all customers are printed on a 3 x 5 inch card and the salesman and Mr. Korhandler follow them up. The cards are routed to make contacts easy during the day so that there isn't any unnecessary backtracking unless the customer is out. A record of every call must be marked on the cards to show that none has been missed.

A duplicate set of the cards is retained in the office. A list of products ordered is always recorded. This information comes from the regular order sheet. At monthly intervals, Mr. Korhandler checks the office cards to see if customers are buying the same products or additional ones. If he finds that certain customers are cutting down their purchases of certain products, he checks to see if they have turned to a similar product from his stock.

"It is possible that a customer may change from one floor polish to another brand," says Mr. Korhandler. "This is satisfactory as far as I am concerned. The object of my check



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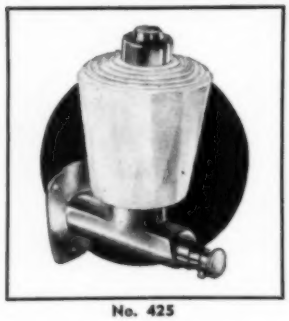

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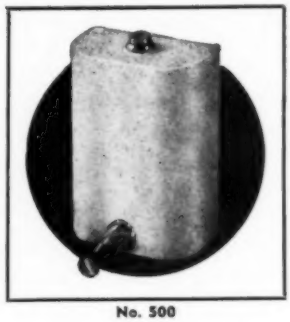

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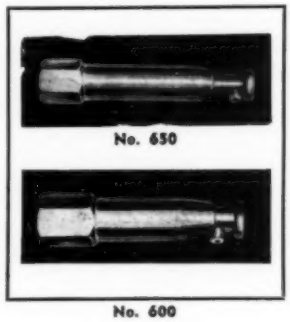

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though, is to see if a customer who previously bought polish has reordered from us. If not it means that we are losing this sale and we have to investigate to find out just why."

This check-up is made as part of Mr. Korhandler's policy in building up more sales from his regular customers.

Departmentalizes Inventory

BECAUSE of the large number of items handled by N. Brittingham & Sons, Mr. Korhandler has departmentalized all his stocks into classifications. Such classifications are paper goods, galvanized and metal products; detergents, brooms, mops and brushes; mechanical equipment and so forth.

Mr. Korhandler has made up a list of these classifications, and under each classification, which is in bold type, are listed the products and merchandise that belong under it. Alongside of the classification is listed the place where it can be found, such as main floor front, second floor center or third floor rear section, etc.

"We have divided up our locations in the building as front, center and rear on each floor and then the basement," explains Mr. Korhandler. "Our packing and office employees can check to see in what section certain classifications of merchandise are stocked and from that location find the exact place where a specific item is stocked. This type of listing is particularly helpful when new people are employed in the concern."

As the stock men withdraw merchandise from inventory to fill orders, they take a sight inventory to see if the merchandise is decreasing. The firm re-orders a large percentage of its merchandise without even checking, as certain established items have a continual turnover. With the stock employees noting the other products the firm is never out of stock and always has a balance on hand to fill its regular requirements.

Rent Floor Machines

THE firm does a sizable rental business in floor machines. Many small establishments, offices and other customers that are serviced have need of an occasional sander or polisher and the firm is certain to service their requirements.

In fact, a record is retained of the periods that these customers rent this equipment so that as the regular period approaches, the prospect is reminded of the firm's rental service. If a firm polishes its floors bi-monthly or every quarter, this fact is recorded and when this period of time has elapsed, the customer is approached again for similar equipment rentals.

The firm charges customers $3.00 per day for polishers, $3.50 for a sander and $3.00 for an edger. Hand sanders rent for $2.00 per day.

"Although we approach regular customers with the purchase of equipment, many are too small to buy a polisher or sander," says Mr. Korhandler. "They are primarily interested in renting it for a day or two and we satisfy their requirements. In this way we build a rental business and also sell them the products used with the machine.

The firm stocks as many nationally branded items as possible. It feels that these products need no introduction or salesmanship and also marks Brittingham as a reputable house handling established merchandise.

The firm tries to highlight its trade name of N. Brittingham & Sons as much as possible, by getting as much of its ordinary merchandise packed in containers and packages bearing this trade name. In other cases, they make prolific use of labels that are attached to products so that customers know from whom to order replacements.

"We carry a full line of branded merchandise and don't go in competition with them in merchandise packed in containers bearing our trade name," says Mr. Korhandler. "The only time we pack merchandise in boxes containing our brand name is when we don't have a nationally known product of that type. Rather than promote an unknown name, we may just as well establish our own brand."

"But everything that leaves our warehouse has our label attached to it so that the customer will know we handle that product. And we are proud to attach our label to nationally known products."

Promotional Activities

AFTER the salesman and Mr. Korhandler have completed their regular calls each day, they spend the remaining time in making new acquaintances. Although sales may not be made at the initial meeting, regular follow ups produce inquiries for some articles and products with a resultant sale. And from this start, the firm tries to promote additional business through its routine methods.

"Outside of our personal contacts, the only extra efforts made to obtain new business are through telephone directory advertising," says Mr. Korhandler. "We have listings under janitorial supplies, rental equipment, chemicals, brushes, solvents and others. Many of our first contacts are established through the phone book and we feel that it is our best medium for advertising."

Periodically, the firm may send out blotters, pads and other novelty remembrance items to its customers, such as calendars around New Years. This helps to keep the firm name firmly entrenched in its customers minds.

Sinclair Names Flowers

Appointment of W. M. Flowers to the presidency of Sinclair Research Laboratories, Harvey, Ill., was announced recently. He joined the research and development department of Sinclair Refining Co., East Chicago, Ind., in 1928, was named executive vice-president for Sinclair Research Laboratories in May of last year.

At the same time advancement of E. J. Martin to the post of vice-president and general manager of the research center was announced. He joined Sinclair in 1929 after completion of his chemical engineering training at the University of Michigan. Mr. Martin has been closely associated with the development of additive detergent oils since 1936.

Sinclair Research Laboratories, Inc. conducts all research and development activities for Sinclair Oil Corp. The research center in Harvey was opened in 1948.

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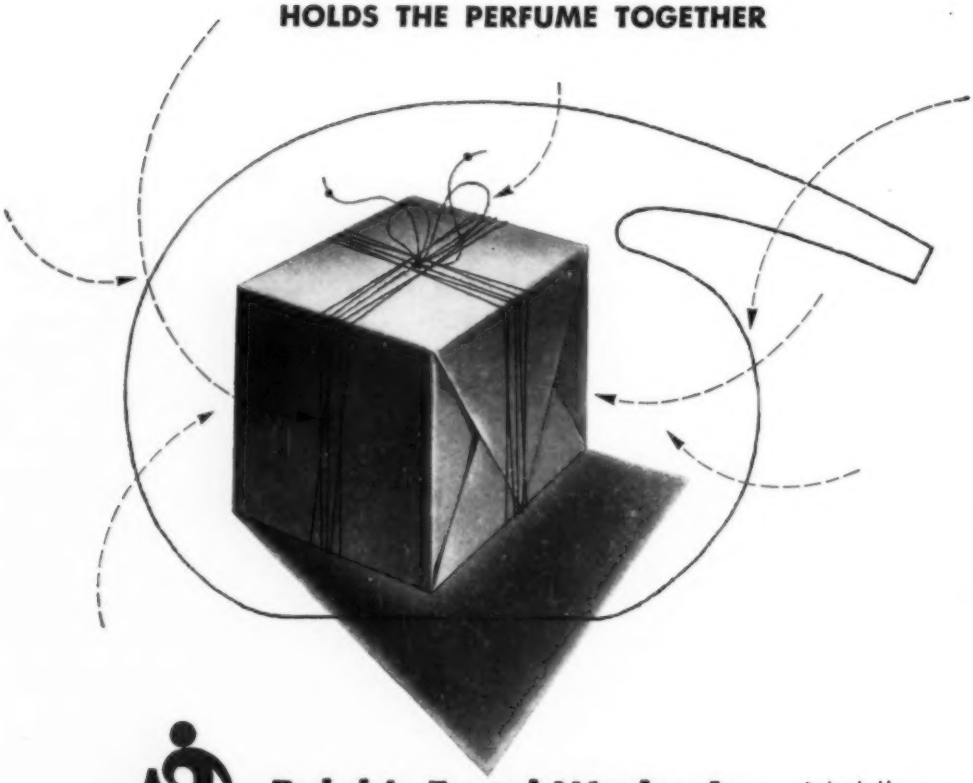

Polak's Frutal Works, Inc., Middletown, New York

*Domestic and Foreign Patents applied for.

Conductive Floor Waxes

By Dr. William W. Walton*
National Bureau of Standards
Department of Commerce
Washington, D. C.

Formulation of floor waxes for conductive floors such as those in hospital operating rooms is now in the course of development.

ORDINARY floor waxes are electrical insulators. Under some conditions, such as those found in operating rooms and gunpowder plants, where a spark from static electricity may cause an explosion, non-conductivity is highly objectionable.

Conductive waxes are now in the course of development by industry. The constituents of conductive waxes should be uniformly mixed before application. The resulting film should have a low electrical resistance, definitely not more than 250,000 ohms, and must be hard enough to prevent adherence of wax to furniture and the soles of shoes. The build-up of multiple coats of wax should be avoided.

The slight difference in the conductivity of wax films prepared from ordinary water emulsion waxes and those prepared from special conductive waxes is offered as evidence that advances in this field are needed. A good wax that would yield a film with a truly low resistance is very desirable.

In the last few years considerable attention has been given to a specialized problem of wax manufacturing: the formulation of waxes for conductive floors. Surprisingly, however, the literature of industrial chemistry shows almost no record of the study of these products. It can be assumed that the field is so new that the records of research have not yet begun to appear. This paper, without implying a recommendation for the widespread use of waxes on conductive floors, will give a brief discussion of the hazards and problems involved.

Suitable waxes have been desired for conductive floors for the same reason that they are used on other floors; that is — for protection, for beautification and for increased ease of maintenance. However, in the case of conductive floors, (which are usually conductive for a very important or even vital reason) the problem has been to change, by suitable formulation, a basic and fundamental characteristic of wax, namely its insulating properties. This adaptation must be made so efficiently as not to interfere with the function of the conductive floor, even though the wax is applied incorrectly, allowed to deteriorate, or used in greater than recommended quantity. These are high requirements to put on a product whose formulation presents such serious problems. Possibly they cannot be entirely met, but the penalties for failure are so high that the problems involved should be studied much more seriously than those involved in the ordinary formulation of waxes.

The National Fire Protection Association states in its Recommended Safe Practice for Hospital Operating Rooms that the resistance of the conductive floor shall be less than 500,000 ohms but greater than 25,000 ohms when measured with electrodes placed three feet apart. The upper limit is to insure the dissipation of static electricity before the voltage can reach values that will cause the formation of a spark. The lower limit is to protect workers from electrocution by defective electrical devices. Specific details of the method of test must be followed to secure comparable results.

If it is assumed that a conductive floor has been waxed with a product that indicates a film resistance of 250,000 ohms, no particular hazard would appear to have been created because this resistance is only half of the maximum resistance allowed for conductive floors by NFPA. However, if this wax is soft and tacky it is possible that a person walking about the room could pick up an appreciable coating of wax on the soles of his shoes. This coating could become thick enough to increase the resistance of the soles, with respect to the floor, to a value so high that a hazard would be created. This same condition could occur with tables, chairs and other movable equipment in the room.

Furthermore, if repeated coats of wax are applied without the complete removal of earlier coats, there is the danger of obtaining a wax film on the floor that has a resistance that is too high for safety. Even a single coat, carelessly applied, could result in local thick spots that have higher resistance than the surrounding area.

There are other ways by which a wax that is apparently satisfactory could become dangerous in use. If the low resistance of the wax is obtained

*Presented before the 38th mid-year meeting of the Chemical Specialties Manufacturers Association, Boston, June 9, 1952.

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by the introduction of an additive that differs greatly in density from the density of the wax emulsion, the additive may settle to the bottom of the container or rise to the top. In either case, if the contents of the container are not shaken carefully before each use, some portion of the emulsion would be deficient in the amount of additive present, and the film of wax obtained from this portion would have a higher resistance than the film obtained from the original sample.

In another case, we may suppose that the additive used to decrease the resistance of the wax is soluble in water. If a floor is waxed with this product and mopped frequently with a wet mop, the additive may be removed by the solvent action of the water and the resistance of the wax film increased accordingly.

There is one more point to consider and that is the change in resistance of a film with humidity. Some films may have their resistance influenced greatly by the relative humidity of the atmosphere to which they are exposed. Such a wax emulsion could appear to be safe when measured under favorable conditions and actually prove to be a hazard when used under less favorable conditions.

To summarize the precautions that must be taken in the use of wax on conductive floors, the following points are listed:

1. The wax film should have a resistance of not more than 250,000 ohms.
2. The wax film should be hard and not tacky.
3. Any additive used to decrease the resistance of the wax film should not separate from the parent emulsion in storage and shall not be removed from the wax film by ordinary maintenance methods.
4. The wax emulsion should be applied uniformly to the floor and the build-up of multiple coats avoided.

The National Bureau of Standards has not undertaken the development of conductive waxes—this is a problem for the wax manufacturers. Preliminary measurements made at the National Bureau of Standards as well as elsewhere have indicated, however, that the resistance of conductive waxes now on the market, with the exception of those waxes which contain carbon, does not differ greatly from the resistances obtained with ordinary water emulsion waxes. Apparently there is still an opportunity for the ingenious in this field.

Establishes Branches

American Sanitation Institute, division of Hugé Company, St. Louis, Mo., recently announced establishment of two branch offices. Kenneth E. Roberts will be in charge of the Columbus, O., branch, serving Ohio, Indiana, western Pennsylvania, and western New York. Mr. Roberts was supervisory food inspector in the District of Columbia Health Department before joining American Sanitation Institute.

The Lincoln, Neb., branch serves Nebraska, Iowa, Kansas, and western Missouri. It is managed by Edwin L. Brunken, who was formerly associated with the American Institute of Baking.

Lotshaw Markets "Pellent"

Andy Lotshaw, well known trainer of the Chicago Cubs baseball team for almost 30 years, has begun national distribution of a new insect repellent originally developed four years ago to make life more pleasant for night baseball players. Known as "Lotshaw's Pellent," the product, in tube, stick or aerosol form, was displayed at the recent Chicago show of the Associated Fishing Tackle Manufacturers. R. W. Moore, vice-president of the Andy Lotshaw Co., 126 Clinton St., Chicago, related that when night baseball became popular players suffered from mosquitoes and to protect themselves would wrap newspapers around their legs before donning their socks.

After studying this problem, the Cub's coach came up with "Pellent," which can be easily applied in paste form to hands and face, as well as legs. The company is already well known in the athletic world for its Andy Lotshaw Body Rub and, following the wide acceptance given the new repellent, it was decided to extend distribution to fishermen, hunters, golfers and other outdoor enthusiasts as well as for use by householders. More than twenty magazines will be used in the 1953 advertising campaign, Mr. Moore said. Distribution will be through jobbers, sporting stores, the drug trade and other outlets.

"Pellent" is said to repel mosquitoes, chiggers, ticks, deer flies, black flies, mites, sandflies, bedbugs and certain other insects .One application, it is claimed will be effective up to twelve hours. Use of the product in spray form from aerosol dispensers is recommended for impregnating tents and clothing. Newest form of the repellent is a stick in metal container for ease of application.

New Hyman Fungicide

Julius Hyman & Co. Division, Shell Chemical Corp., Denver, recently announced that its soil fungicide, widely tested under the code name CBP-55, will be in commercial production during the next four months at its Denver plant. Pilot plant stocks are adequate for fall supplies.

Chem. Mfg. Moves

Chemical Manufacturing Co., recently announced the removal of its New York offices from 21 West Street to new and larger quarters at 444 Madison Avenue, New York 22. The new telephone number is MUrray Hill 8-8700. The firm is sales agent in the United States for industrial chemicals produced by Imperial Industries, Ltd., London, England, and export sales agent for Westvaco Chemical Division, Food Machinery & Chemical Corp., New York.

Sinclair Chemicals Formed

Sinclair Oil Corp., New York, recently announced formation of Sinclair Chemicals Inc., a direct subsidiary. The new organization takes over production and sales of chemicals recoverable from petroleum raw materials heretofore handled by the Petrochemicals Division of Sinclair Refining Co. These include hydrocarbons, special solvents, chemical polymers, petroleum sulfonates, and several chemical by-products of the refining process. P. C. Spencer, president of the parent corporation is also president of Sinclair Chemicals.

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HOOKER SULFIDES

SODIUM SULFIDE

Formula: Na_2S

Appearance: Light, buff colored solid in flake form

TYPICAL PROPERTIES

Molecular Weight	78.1
Melting Point	100° C
Na_2S	60-62%
Water of Crystallization	35% min.
NaCl	1.5% max.
Other Na Salts	2.0% max.
Fe	8 ppm max.
Other Heavy Metals	1 ppm max.

USES

Dehairing Agent: Hides
Desulfurizing Agent: Viscose rayon
Intermediate: Chemicals, dyestuff intermediates
Metal Processing: Ore flotation, metal refining
Other Uses: Manufacturing paper pulp, rubber; textile processing.

SODIUM SULFHYDRATE

Synonym: Sodium Hydrosulfide
Formula: NaSH
Appearance: Light lemon colored solid in flake form

TYPICAL PROPERTIES

Molecular Weight	56.1
Melting Point	55° C
NaHS	70 to 72%
Water of Crystallization	26% min.
Na_2S	2.5% max.
Other Na Salts	1.2% max.
Fe	5 ppm max.
Other Heavy Metals	1 ppm max.

USES

Dehairing Agent: Hides
Desulfurizing Agent: Viscose rayon
Intermediates: Dyestuffs; organic chemicals such as thioamides, thiourea, thioglycolic acid, thio- and dithiobenzoic acids, sodium thiosulfate.

SODIUM TETRASULFIDE SOLUTION

Formula: Na_2S_4
Appearance: Clear, dark red aqueous solution

TYPICAL PROPERTIES

Molecular Weight	174.2
Freezing Range	3.5° to −17° C
Distillation Range	115° to 120° C
Specific Gravity, 15.5°/15.5° C	1.335
Na_2S_4	40%
Sulfur	30%

USES

Soaking Agent: Hides and skins prior to unhairing
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Technical BRIEFS

Pyrethrum Storage Tests

Action of heat and rust on a pyrethrum formulation is the subject of an article in *Pyrethrum Post* 2, No. 4, 2, 1952. A composition containing 45 percent kerosene, 50 percent Me_2CO, and five percent sesame oil for the solvent and 0.25 percent of a 20 percent pyrethrum extract was subjected to accelerated storage tests. Results were determined by biological assay (*Calanadra granaria* crawling on filter papers impregnated with the test solutions after removal of volatile materials).

Containers sealed with the air present showed some decomposition on storage, particularly at 100°. This was due to oxidation. Displacement of air by CO_2 resulted in no oxidation after 19 days at 50°, but partial deterioration at 100° after the same period. No difference resulted between storage at 50° with air alone or with air and high-pressure CO_2. DDT was stable under these conditions and was compatible with pyrethrum extract provided the containers were clean and rust-free. DDT was almost completely decomposed within three days at 100° but substantially un-decomposed at 50° when rusty nails were placed in the containers. Pyrethrins were indifferent to rust. The pyrethrum formulation was completely compatible with brass, tinned brass, and aluminum. Some deterioration resulted from nickel. Commercial grades of mono- and ortho-dichlorobenzene were satisfactory auxiliary solvents to prevent separation of the kerosene and M_2CO which often contain H_2O.

More About DDT Resistance

A line of houseflies known to be resistant to DDT and bred in the laboratory unexposed to further DDT still showed high resistance to DDT residues after 19 generations. To produce similar kills these flies required a DDT exposure 18 times that required by nonresistant flies. Repeated exposures to DDT of the same individuals of the resistant line produced mortalities similar to those obtained from one exposure time equal to the total of the successive exposures. Resistant flies which survived DDT treatment reproduced normally. Roy A. Harrison in *New Zealand J. Sci. Technol.* 33B, 92-5 (1951), through *Chem. Abstracts*, May 10, 1952, p. 4162.

Pyrethrum Extraction Plant

Pyrethrum farmers in East Africa plan to build a pyrethrum extraction plant in Nakaru, according to recent reports. The plant is to process a major proportion of the local harvest and at the same time is designed to insure adequate supplies of pyrethrum for the area. The factory is to be built on a cooperative basis by the pyrethrum farmers and is to be administered by the Kenya Pyrethrum Board. With this plan in mind it has been decided to sell no more than 50 percent of the expected 1952 harvest in advance. *Chemische Industrie*, April 1952.

Quaternary Use Reviewed

Uses of quaternary ammonium compounds for sterilizing or disinfectant purposes are reviewed by J. C. L. Resuggan, chief chemist and director of the British Hydrological Corp., in the June issue of *Soap, Perfumery & Cosmetics*.

The mechanism of these compounds' bactericidal and bacteriostatic action is discussed; and their high bactericidal potency. Their particular fitness for application in the food and catering industries, and in the medical field on instruments and in actual treatments is stressed.

The power of adsorption of the quaternaries is great. Allowance must therefore be made for the fact that organic material, membranes and tissues will adsorb and to some extent inactivate the molecules from these solutions. However, such adsorption may very well render a surface practically noninfective for a long period; it has been demonstrated that a surgeon, physician or nurse, rinsing his hands in such a solution, will be keeping their hands free from infection for a considerable period. In the field of detergency mixtures of quaternary ammonium compounds with suitable detergent substances have enhanced the value of the latter by making them anti-bacterial and preventing their solutions developing any considerable growth of organisms while they are in use.

The question of compatibility is reviewed, and uses in hair and toilet preparations discussed. Incorporation of quaternaries in perfume sprays, apart from imparting disinfectant action is said to assist persistence. Use in tooth paste is mentioned.

Art Directors Elect

Ralph Pollard, associate art director of Procter & Gamble Co., was elected president of the Art Directors Club of Cincinnati and Lloyd Smith, also a P. & G. man, was chosen secretary of the club.

Iodine . . .

(*From Page* 153)

quired when first examined.

Discussion

THE lowest iodine concentration which could be accurately determined, with available methods, was 0.2 p.p.m. Iodine in solution is converted, in part, to non-bactericidal iodides and iodates. This conversion is not to be confused with the "demand" characteristic of organic materials for halogens. Because of the relatively low sensitivity of the residual test and the conversion of active iodine, it is not feasible to carry out long time exposure period tests nor to determine the bactericidal action of quantities less than 0.2 p.p.m. For these reasons the investigation includes observations only at one, two, and five minute exposure of bacterial suspension to the action of iodine.

The dilution waters used did not contain nitrogenous materials frequently found in natural waters. When ammonia was added to chlorine demand free distilled water in preliminary experiments, the formation of iodoamines was not demonstrated in

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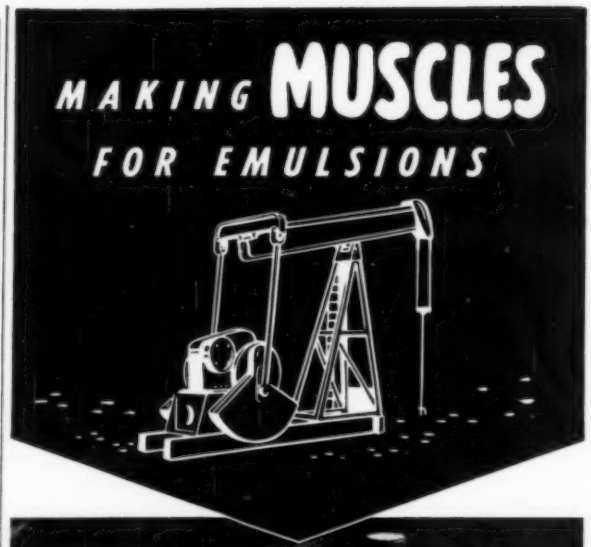

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30 minute exposure periods at 20°C. to 25°C. The possibility of iodoamines being produced under other conditions has not been excluded.

From the summarized data in Table I it is apparent that decreases in temperature and increases in pH reduce the bactericidal action of iodine. Under constant conditions of temperature and pH, the concentration of iodine which killed an organism in one minute was approximately twice the amount required to produce the same result in five minutes.

When the pH was the same, more iodine was needed to kill in the temperature range of 2°C. to 5°C. than in the range 20°C. to 26°C. For the strains of *Shigella* studied it was necessary to use two to four times the concentration of iodine at temperatures of 2°C. to 5°C. as at 20°C. to 26°C. The kill of S. *schottmuelleri* and S. *typhi-murium* was less affected by reduction of temperature, and the strains of S. *typhosa* were least affected.

The effect of changing pH at constant temperatures was in general of low magnitude, and was more apparent in the range of 2°C. to 5°C. than in the temperature range 20°C. to 26°C. The *Salmonella* species studied showed little effect of changed pH at either temperature range. The coliform group showed relatively little effect in the 20°C. to 26°C. range, but marked effects in the 2°C. to 5°C. range. The strain of *A. aerogenes*, when tested at 2°C. to 5°C. required between three and four times as much iodine to kill at pH 9.15 as at a pH 7.5.

The *Salmonella* species were the least resistant of the organisms studied. S. *typhi-murium*, the most resistant of the *Salmonella* group, showed a resistance approximately equal to S. *dysenteriae* II, the most sensitive species of the *Shigella* studied. The strains of *E. coli*, *A. aerogenes* and S. *fecalis* were intermediate, showing a resistance to iodine greater than the *Salmonella* but less than two of the three *Shigella* examined. At pH 9.15 and a temperature of 20°C. to 26°C., S. *fecalis* was the most resistant organism in the study. Increased resistance at the temperature range of 2°C. to 5°C. as compared to 20°C. to 26°C. was marked for the *Shigella*, *Escherichia*, *Aerobacter*, and S. *fecalis*.

The bactericidal action of iodine resembles that of chlorine in the following respects: (1) Greater activity accompanies higher temperatures: (2) Lower activity is exhibited at higher pH ranges: (3) A combination of low temperature and high pH is the least favorable environment for efficient disinfection. However, higher concentrations of iodine are required to produce comparable kills under similar conditions.

Conclusion

IT IS appreciated that in working with iodine under the conditions of this study the degree of control which it is possible to exercise over the variable factors has not always been ideal. However, the range within which the variables fluctuated has been set forth. It is hoped that anyone examining the results will consider the limiting factors in evaluating the significance of the following trends:

1. At a given exposure time and pH the iodine concentration required to kill at 2°C. to 5°C. may be as much as four times greater than at 20°C. to 26°C.
2. The minimum average iodine concentration which kills all tested species in one minute under the most adverse conditions of pH (9.15) and temperature (2°C. to 5°C.) is 4.3 p.p.m.
3. The minimum average iodine concentration which kills all tested species in one minute under the most favorable conditions of pH (6.5) and temperature (20°C. to 26°C.), is 0.6 p.p.m.
4. S. *flexneri* I and S. *sonnei* I appear to be somewhat more resistant than the *E. coli* strains studied.
5. S. *typhosa* is the least resistant to iodine, and S. *sonnei* I the most resistant of all the cultures studied.

Acknowledgment

THE assistance of D. G. Ballinger, John Kopp, Richard Stutz, and Paul Schmitz, with the chemical and amperometric procedures is gratefully acknowledged.

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New Aspden warehouse opened in 1946 will be expanded

Aspden Assoc. 10 Years Old

ASPDEN ASSOCIATES, INC., Greensboro, N. C., completed ten years of successful operation in the field of floor maintenance and sanitation with the close of business, Saturday, August 30th. The firm was founded in 1942 by Milton Honor Aspden, following several years of activity in the Southeast as district manager for a midwest firm specializing in the floor maintenance field. The growth of the sole proprietorship has been consistently conservative and steady.

During the war years, offices were maintained in Mr. Aspden's residence and warehousing was done through rented space in a local public warehouse. In 1945 offices were opened in the business section and plans and specifications drawn for construction of their present warehouse which was occupied on March 1, 1946.

Located on the southwest corner of Battleground Ave. and Prescott St., close to the main business section, the present warehouse occupies only part of the 20,000 square foot lot. Plans and specifications have been just completed for the erection of additional warehousing facilities which will more than triple present area. Construction is expected in late fall or early spring—depending upon Federal restrictions.

Concentrating solely on distribution and service, the firm does no manufacturing or mixing. All merchandise is warehoused in Greensboro, assuring prompt delivery. An adequate inventory to meet all current needs is continuously maintained. Distribution of all merchandise, with the exception of mechanical equipment and certain hard lines, is under the distinctive "Doubleaye Brand" trade mark.

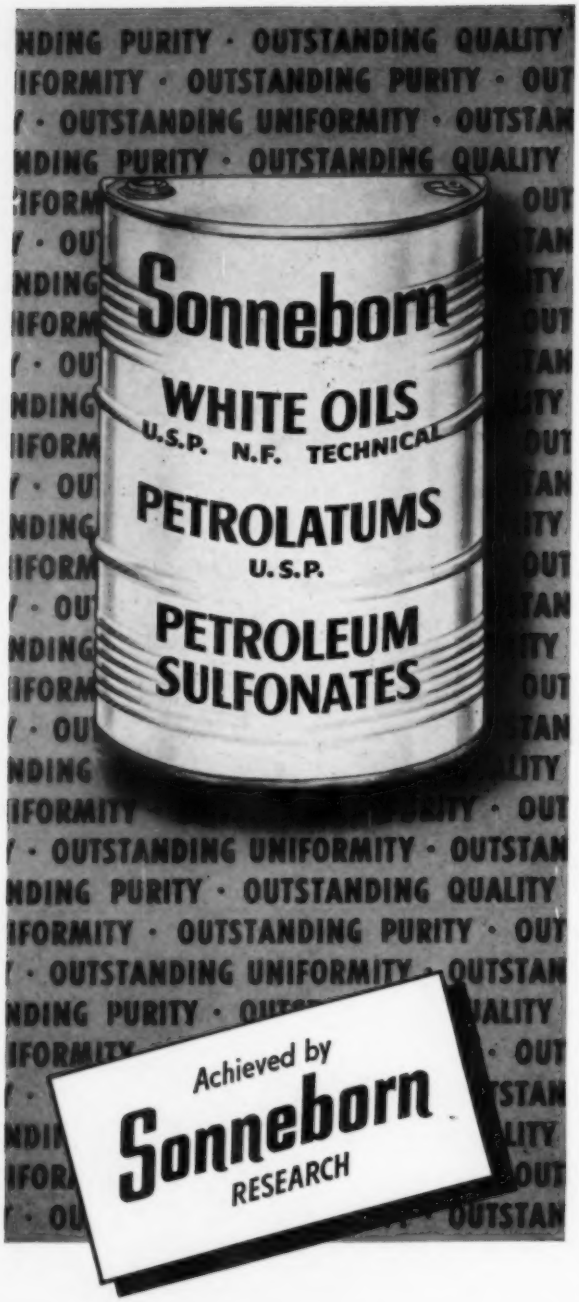
The growth of the firm is attributed to sound ethical principals and to the continuing policy of maximum service through personal supervision and assistance to customers in connection with all phases of floor maintenance and sanitation.

Because of Mr. Aspden's background in the field, it is natural that floor maintenance accounts for not less than 75 per cent of the volume of business done, although a complete line of janitor supplies is carried and promoted.

The territory served consists of North Carolina, South Carolina and Virginia. Customers are mainly educational institutions, textile and industrial plants, as well as all phases of daily life-governmental agencies, stores, hospitals, etc.

On November 1, 1951, the corporate form of operation was assumed and in so doing it was possible to give concrete acknowledgment to the services and contribution to the growth of the firm by certain employees. Grady W. Scott, who entered the sales department in February 1946 became vice-president in charge of sales. Dennis R. Snead, who became office and warehouse supervisor in mid-1946 was elected treasurer. Other officers are: Mr. Aspden, president and Doris Stewart Aspden, secretary. At the present, there are nine employees.

According to Mr. Aspden, the firm is constantly on the alert for improved products and methods; more efficient and effective equipment; and welcomes communication from primary manufacturers seeking distribution in the area the firm covers on items which are pertinent to their interests.



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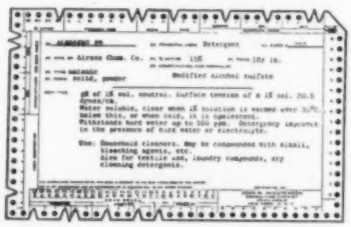

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Metal Cleaners

(*From Page 45*)

leum sulfonates, the alcohol sulfates and the alkyl aryl sulfonates, are less adversely affected by hard water and show better rinsability. Secondary alkyl sulfonates and alkyl aryl sulfonates, in conjunction with the appropriate alkalies, are effective for most types of metals. They reduce the processing time and the concentration of alkali required. (31)

Studies made by Morgan (32) showed that a detergent of the alkyl aryl sodium sulfonate type (e.g. "Nacconol NR") improves the cleaning efficiency of both alkaline and acid metal cleaners. Strow (30) is of the opinion that the alkyl aryl sulfonate type of surface active agent is probably the most useful type of surfactant for metal cleaning. He stresses, however, that not all members of this group are equally effective. He also notes that the alcohol sulfates are also quite good for metal cleaning.

The nonionic surfactants are also finding increasing employment in metal cleaning compounds. Certain nonionics that are suitable for such application show good detergency on types of soil that are not removed very effectively by the alkyl aryl sulfonates. (30) Davidsohn (33) has noted that nonionics greatly improve the suspending power of anionic syndets—a fact of importance where a large amount of soil is to be removed. According to the literature of detergent manufacturers, the addition of certain nonionics improves the efficiency of such alkaline cleaners as sodium metasilicate, trisodium phosphate and sodium orthosilicate by an increased wetting of the surface and better emulsification and dispersion of the soil.

Silicates, notably sodium metasilicate, sodium sesquisilicate and sodium orthosilicate, are major raw materials of alkaline metal cleaners. Valuable as detergents, they also rate high as corrosion inhibitors. (34) As remarked by Merrill, (35) silicates are used in many metal cleaning operations because of their detergent properties, together with comparative freedom from attack on most metals, even those sensitive to alkalies. He cites extensive tests with various types of alkaline cleaners which indicated that superior results were obtained with products containing rosin soaps and silicates. He also notes that sodium silicates, particularly the metasilicate, are used satisfactorily in electrolytic cleaning, including such operations as cleaning brass, die castings, copper and steel, prior to the deposition of nickel and chromium.

The effectiveness of many alkaline metal cleaners, especially their free rinsing properties and usefulness in hard water areas, is enhanced through the inclusion of water softeners and sequestering agents. Sodium carbonates and phosphates are useful as water softening agents. While all sodium phosphates possess the ability to soften water, the complex polyphosphates, like tetra sodium pyrophosphate and sodium tripolyphosphate, have the very valuable property of sequestering or inactivating certain metallic ions, such as calcium and magnesium. Thus, when tetra sodium pyrophosphate is present in a metal cleaner, it tends to prevent the deposition of insoluble metallic soap upon the work and thereby contributes toward a more perfectly cleaned surface. Silicated alkaline metal cleaners are available that also contain sequestrants, soaps and surfactants; such products being designed to provide maximum detergency under all conditions of use.

Remembering that there are certain common requirements and a degree of interchangeability, it is now possible to discuss the formulation of the three main types of alkaline cleaners; namely, those designed for soak, spray or electrolytic cleaning.

Soak Type Cleaners

THERE seems to be general agreement among producers of soak or tank type alkaline cleaners that these materials should be capable of wetting and penetrating heavy oils and greases and be able efficiently to saponify, emulsify or suspend the dirt so that a thorough rinse will leave the metal surface in the requisite clean condition. It is important that the cleaner be so formulated as to prevent the redeposition of the suspended soil. It is also desirable that the cleaner be kept at the optimal pH and that it provide its effects for a long period of time.

According to Sizelove, (29) soak cleaners are generally used as concentrations of from 4 to 8 ounces per gallon and at temperatures ranging from 160 to 210°F. The higher the temperature, the faster will be the cleaning action, but non-ferrous metals oxidize much faster at higher temperatures. Hence, the optimal range for steel is 190 to 210°F., while that for brass, copper, aluminum, zinc base die castings and lead alloys is between 170 to 190°F.

Formulas for making soak or immersion type alkaline cleaners are available not only in the technical and patent literature, but also in the publications of suppliers of raw material. The latter source provides the following formulas (in percentages) for heavy duty products for cleaning steel and similarly resistant metals, not only in regular tanks, but in electrolytic tanks or automatic washing machines as well:

	A	B
Sodium metasilicate, anhydrous (Drymet*)	20	20
Caustic soda	70	67
Tetra sodium pyrophosphate	10	—
Trisodium phosphate, monohydrate	—	13

(* Cowles Chemical Co., Cleveland, O.)

Rosin, long used in formulating alkaline cleaning compounds, has been largely replaced by sodium soaps of rosin or rosin acids. The use of such soaps is illustrated in a composition described in a government publication. (36) Suitable for immersion and electro-cleaning process, the cleaner consists of:

	percent
Sodium orthosilicate	85
Sodium carbonate, anhydrous	10
Sodium resinate	5

Tests have shown that improved cleaning effects can be obtained with a compound containing a standardized soap of this type, such as the following:

	percent
Sodium metasilicate	46.0
Sodium hydroxide	27.6
Trisodium phosphate	18.4
Sodium rosinate (Dresinate X*)	8.0

(* Hercules Powder Co., Wilmington, Del.)

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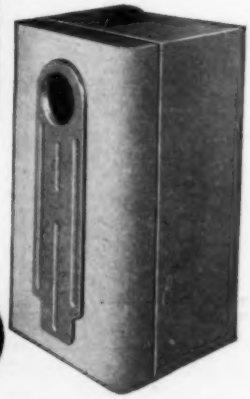

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ting agents are similarly important in alkaline tank cleaner formulations. McCutcheon (22) mentions the use of the following simple mixture, in 5 per cent concentration, for cleaning steel surfaces:

	percent
Dodecyl benzene sodium sulfonate	5
Trisodium phosphate, anhydrous	95

The use of an anionic detergent in the formulation of several soak cleaners to meet various requirements is offered in one manufacturer's literature, as follows:

	A	B	C	D	E
Trisodium phosphate	50	—	35	—	50
Tetra sodium pyrophosphate	—	10	5	5	20
Sodium metasilicate	30	60	50	40	10
Sodium carbonate	15	20	—	—	15
Sodium hydroxide	—	—	8	50	—
Sodium alkyl naphthalene sulfonate (Sorbit P*)	5	10	2	5	5

(* Alrose Chemical Co., Providence, R. I.)

Used at a rate of 2 to 8 ounces per gallon, compositions A, B and E are suggested for use on aluminum, brass and other nonferrous metals; C and D are being used on steel.

A well rounded formula for the tank cleaning of steel and similarly resistant metals is provided in the literature of a leading silicate producer. Consisting of essentially anhydrous ingredients and offering an efficient soaking action, it is made from:

	percent
Sodium metasilicate, anhydrous (Drymet)	20
Caustic soda	45
Synthetic wetting agent	10
Tetra sodium pyrophosphate	5
Soda ash	20

Other formulations to meet the soak cleaning requirements of nonferrous metals are also available. Thus, a satisfactory cleaning bath suggested (37, 38) as a soak cleaner or as an electrolytic cleaner for magnesium consists of:

Trisodium phosphate	4.0 oz.
Sodium carbonate	4.0 oz.
Soap (or other suitable wetting agent)	0.1 oz.
Water, to make	1.0 gal.

When used for electrocleaning, it is advisable to omit the soap from the above solution.

A cleaner for aluminum is cited (22) as consisting of:

	percent
Soda ash	20
Trisodium phosphate, anhydrous	20
Sodium metasilicate	20
Alkyl aryl sodium sulfonate	1
Water	39

Two well-balanced preparations for use in tank cleaning of softer metals like aluminum, brass, copper, die-castings and the like may be prepared from:

	A	B
Sodium metasilicate, anhydrous (Drymet)	30	36
Synthetic wetting agent	10	12
Trisodium phosphate, crystals	35	—
Trisodium phosphate, monohydrate	—	20
Soda ash	20	26
Tetra sodium pyrophosphate	5	6

If a simpler formulation is required for the cleaning of such nonferrous metals as brass, copper and bronze, either of the following compositions may be used:

	A	B
Sodium metasilicate, anhydrous (Drymet)	55	60
Soda ash	30	30
Trisodium phosphate, monohydrate	15	10

Of course the patent literature provides a number of suggestions for cleaning baths for metals, made of aluminum or magnesium. (39, 40) Corrosion inhibiting compositions for forming cleaning baths for tin and aluminum may be prepared, according to one patent (41) from sodium silicate, sodium metasilicate and a material such as sodium acid phosphate, sodium acid sulfate and sodium bicarbonate.

(To be concluded)

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News

Knight Joins Penick

Dr. Odon S. Knight recently joined S. B. Penick & Co., New York, to be in full charge of the company's engineering activities. Dr. Knight comes to Penick from Commercial Solvents Corp., New York. Previously he had been with Link-Belt Co. and J. P. Devine Manufacturing Co. He also was assistant professor of chemical engineering at the University of Colorado, and later professor at Rose Polytechnic Institute for a period of four years. His work covers engineering matters for Penick and for its subsidiary, New York Quinine and Chemical Works, Inc.

Jones to Hollingshead

R. M. Hollingshead Corp., Camden, N. J., recently appointed Philip Jones, formerly of Montgomery Ward & Co., Chicago, as assistant director of sales and merchandising. In this position Mr. Jones assists Donald O. Severson, vice-president in charge of sales and merchandising for Hollingshead.

Before joining Hollingshead, Mr. Jones was associated with Montgomery Ward for 20 years, serving in various executive capacities. He joined the firm in 1929. For eight years, shortly before joining Hollingshead, he served as administrative assistant to Montgomery Ward's retail vice-president with headquarters in Chicago.

Acquires Innis, Speiden Unit

Purchase of the insecticide division of Innis, Speiden & Co., New York, by a new company, Larvacide Products, Inc., with offices at 117 Liberty Street, New York, was announced recently. Conrad C. Johnson, former manager of the insecticide division of Innis, Speiden & Co., for the past 20 years, is president of the new company. George S. Hamilton, former treasurer of Innis, Speiden & Co., functions as treasurer of the new company.

Larvacide Products, Inc., is supplying all products currently furnished by the insecticide division of Innis, Speiden. The plant in Niagara Falls, N. Y., continues to manufacture "Larvacide" (chloropicrin), while items not containing Larvacide will

CONRAD C. JOHNSON

be produced in a modern plant in the New York City area. Additional products will be announced in the near future.

New C.S.M.A. Members

Six new members were recently elected to the Chemical Specialties Manufacturers Assn. New active member firms and their representatives include Turco Products, Inc., Los Angeles, C. F. Devine; Ethyl Corp., New York, Dr. Charles L. Smith; Uncle Sam Chemical Co., New York, Herman Schwartz; American Chemical Co., New Orleans, Joseph Lassen. New C.S.M.A. associate member firms and their representatives are Mac Lac Co., New York, Henry Blanchford, and Archer - Daniels - Midland Co., Minneapolis, B. W. Schroeder.

New Wax Product

Sterling Value Co., Great Neck, N. Y., recently introduced "Glo-All," a clear transparent protective wax coating for use in the home to waterproof wallpaper and make it washable. Other uses for the product are as a protective coating for finishes of furniture, woodwork, floors, automobiles, enameled surfaces, venetian blinds, etc. "Glo-All" may also be used to remove tarnish from silver and clean windows, shoes, etc. It retails in quart containers for $2.95.

T. T. McCarthy Dies

Thomas T. McCarthy, former sales manager for the Shinola Co., manufacturer of polishes, Rochester, N. Y., died August 12. Mr. McCarthy had retired in 1948. His age was 76.

New Floor Finish Specs

New specifications covering finishes for floors of Northern hard maple have been issued recently for the Maple Flooring Manufacturers Association, Chicago, by Timber Engineering Co., Washington, D. C., whose wood research laboratory now functions as the official laboratory for the association.

The new specifications, which became official September 1, superseding those published in 1949, establish standards for finishes for both heavy duty and gymnasium floors. All finishes meeting the new specifications when tested by the official laboratory will be placed on MFMA approved list issued by the association, and may be advertised and sold as MFMA approved products.

Copies are available from the Maple Flooring Manufacturers Association, 548 Pure Oil Building, Chicago 1, or from Timber Engineering Co., Project F-66, 1319 - 18th Street, N.W., Washington 6.

Merge Sales Facilities

Daggett & Ramsdell, Inc., Newark, N. J., and Zonite Products Corp., New York, recently made a joint announcement stating that they had merged their sales and distribution facilities. The two concerns are otherwise unrelated. Robert Buckalew, Zonite's sales manager, has assumed sales direction for both companies.

Aerovap Issues Booklet

"Selling Aerovap" is the title of a brochure recently published by American Aerovap, Inc., New York. It is intended as a selling guide for the company's sales force. Sanitation's paramount importance as an adjunct to chemical insect control is stressed.

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A statement by the Interdepartmental Committee on Pest Control setting forth recommendations concerning thermal generators as used for the control of flying insects is included. The final section is concerned with insect resistance.

Garon in Hyman Post

Shell Chemical Co., New York, recently announced appointment of A. J. Garon as manager of the Houston area for the Julius Hyman & Co. (Denver) division. His office covers agricultural product sales for Texas, Oklahoma, Arkansas, Louisiana, and Mississippi. It is located at 1601 Melrose Building, Houston. Mr. Garon has been engaged in technical service in the firm's agricultural chemical activities, and since 1950 he has been technical salesman in the Houston district.

Kinsella Heads Barrett

Appointment of T. J. Kinsella as president has been announced recently by Barrett Division of Allied Chemical & Dye Corp., New York. Mr. Kinsella was formerly executive vice-president of the division. The resignation of Archie H. Dean as sales director of Barrett was announced last month.

Hart in New Post

Appointment of Allison B. Hart as director of foreign operations was announced recently by Lambert Pharmaceutical Co., St. Louis. Mr. Hart is responsible for overseas operations of the company and its subsidiaries, except in Canada. His previous associations include Chesebrough Manufacturing Co. and Sterling Drug Co.

Monsanto Scholarships

Seventeen undergraduate scholarships to be administered by colleges or universities are included in the 1952-53 program of aid to scientific education recently announced by Monsanto Chemical Co., St. Louis. The program also includes 13 graduate fellowships, one graduate scholarship, and seven grants-in-aid to various schools. The undergraduate scholarships constitute an innovation, and have been granted mostly to engineering schools.

Harrison Advances Two

A. S. Harrison, president of A. S. Harrison Co., South Norwalk, Connecticut, recently announced the election of C. Walter Buhler as executive vice-president and G. Gardner Pitts as secretary of the company. The Connecticut firm manufactures PREEN floor wax and other packaged household products.

C. WALTER BUHLER

G. GARDINER PITTS

Mr. Buhler joined Harrison in 1946, shortly after its formation. He was placed in charge of the office and purchasing. In 1947, he was appointed assistant treasurer and later named to the post of secretary. Early in 1949 Mr. Buhler was placed in charge of plant operations when the Harrison factory, which he assisted in planning, was completed in South Norwalk. In 1950 he was elected to the board of directors. Mr. Buhler was previously associated with McKesson & Robbins.

During the war he served with the Office of Strategic Services in counter espionage both in Washington and ETO. Mr. Buhler is a graduate of Yale, class of '36, and has done graduate work at Columbia in economics and business administration.

Mr. Pitts joined A. S. Harrison Co. in January, 1946, immediately after returning from duty in the C.B.I. theatre with the Army Engineers. In 1951, Mr. Pitts was elevated to sales manager of the company in charge of the department store operations and later became divisional sales manager. He came to the company from Minwax Co., Inc., where he worked in the Chicago office as assistant division manager.

Specialties Pricing Change

Reporting requirements for several thousand chemical specialties manufacturers have been simplified by a recent OPS action. Amendment 55 to the manufacturers' general ceiling price regulation (CPR 22), effective September 15, 1952, eliminates the requirement that manufacturers of new chemical specialties which are mechanical mixtures use form 128 in reporting ceilings on new products, calling for detailed breakdowns of costs. The requirement for using form 128 was removed with respect to new chemical specialties other than mechanical mixtures by amendment 43 to CPR 22, issued March 21, 1952.

Specialties concerned include chemical compositions or mixtures prepared for industrial, institutional, or household uses, including such products as cleaning fluids, disinfectants, insecticides, germicides, polishes, bleaches, and stain removers.

Joins Tall Oil Group

National Southern Products Corp., Tuscaloosa, Ala., has joined the Tall Oil Association, New York, it was announced recently. Addition of this latest member brings the total of the association's membership to 13 out of 14 manufacturers and sellers of tall oil.

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Sap. No.	55-65	Sap. No.	75-85

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Container Co. Names Two

John H. Strome has been named sales manager and Thomas T. Crowley assistant to the president of Inland

JOHN H. STROME

Steel Container Co., Chicago, it was announced last month. Mr. Strome has been with the firm since September, 1950 as assistant to the president. Previously he had been connected with the ore mine operations of Inland Steel Co., the parent organization.

Mr. Crowley, who succeeds Mr. Strome as assistant to the president, has been with Inland Steel Container Co. since January. Prior to that he was a member of the Economic Cooperation Administration in London for three years, serving as chief of the industry division and as a specialist in steel.

—— ♦ ——

Pennsalt Shifts McWhirter

James M. McWhirter, formerly southern works manager for Pennsylvania Salt Manufacturing Co., Philadelphia, has been appointed manager of the firm's Wyandotte (Mich.) works, it was announced recently. He succeeds G. A. Nelson, who has been assigned to general engineering and consultative work connected with Pennsalt's expansion plans.

Ritner W. Tomlinson was named to succeed Mr. McWhirter as superintendent at Calvert City. Other appointments announced at the same time are: Herman J. Eichenhofer, formerly assistant superintendent at Wyandotte, now superintendent of the electrolytic chlorine, caustic soda and hydrochloric acid plant now under construction at Calvert City; J. T. Gormally, formerly superintendent of the Cornwells Heights plant, now assistant to the production manager; Frank J. Power, assistant superintendent, now acting superintendent at Cornwells Heights.

—— ♦ ——

Reorganizes Bulk Sales

R. M. Hollingshead Corp., Camden, N. J., recently announced the merger of its government sales and industrial sales divisions, thereby combining all sales of bulk items under one division. Frederick H. Lee, Jr., formerly sales manager of the industrial division has been appointed manager for both divisions. William L. Carolla, formerly assistant sales manager of industrial division, is now sales manager of that division. John W. Reed, Jr., formerly west coast representative for industrial division, has been named sales manager of the government sales division.

—— ♦ ——

Klauzar Forms Company

Organization of Klauzar Distributing Co., Milwaukee, to handle a new household cleaning solution was announced recently by William P. Klauzar. Mr. Klauzar was formerly a representative of Steelco Stainless Steel Co.

—— ♦ ——

Santophen Solution Offered

Availability of "Santophen I" solution in commercial quantities was announced recently by Monsanto Chemical Co., St. Louis. The product consists of 75 percent by weight "Santophen I" and 25 percent isopropanol, thus eliminating one step in preparing germicidal formulations which involve the use of isopropanol. Effectiveness against both fungi and bacteria, stability, and ease of handling are claimed for the product by the manufacturer.

The company continues to offer "Santophen I" flakes for those who prefer the 100 percent active material. Recommended uses for the germicide include sanitizing of restrooms, disinfecting floors, walls and equipment in hospitals, deodorizing garbage cans, and treating swimming pool premises for the control of athletes foot.

Crabtree to Crown Can

Election of George W. Crabtree as vice-president in charge of manufacturing of Crown Can Co.,

GEORGE W. CRABTREE

Philadelphia, was announced recently. For the past twenty years Mr. Crabtree was associated with Continental Can Co., New York, and at the time of joining Crown Can was division manager of manufacturing, eastern division.

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Microbiology for Mellon

A division of microbiology, that will function in the department of analytical chemistry, has been established in the Mellon Institute of Industrial Research, University of Pittsburgh, it was announced recently. The new division will be available to research departments and fellowships of the institute for specialized advice and short-time studies in bacteriology. It will render service to members in the more refined applications of microscopy, particularly in the field of phase microscopic examinations. William W. Leathen, a Fellow of Mellon Institute since 1946, is head of the division.

—— ♦ ——

Beat-Sall at Show

Beat-Sall Products, Inc., Aurora, Ill., occupied a booth at the National Food Distributors convention and trade show in Chicago recently, to present "Beat-Sall" chemical drain cleaner. In addition to serving as a drain cleaner, the product also acts as a renovator and sanitizer and as a septic tank solvent, the company claims.

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Urges Basic Biological Research

CHEMISTS and biologists have been devoting too much attention to production of the newer insecticides, such as DDT, and not enough to basic biological research, a noted scientist, Dr. J. A. Logan, of the Rockefeller Foundation's division of medicine and public health, asserted in a Chicago address last month. This, he said, has been due to the urgency of war and the magnitude of the insect problem. But, at the same time, he contended, this neglect of research has imperilled the benefits that have accrued from use of the powerful insecticides. Now a great deal of time and money are being spent in an effort to establish the mode of action of insecticides and to gain a clearer understanding of the resistance problem.

"There is every reason to believe," Dr. Logan added, "that this work will be successful and that, in addition to maintaining our present gains, even greater advances will be made."

Dr. Logan was speaking at a symposium on "Health and Human Engineering" held as part of the observance of the Centennial of Engineering, which brought 30,000 members of 64 professional engineering societies to Chicago, Sept. 3 to 13.

The resistance phenomena has, so far, not affected the efficiency of the new insecticides in malaria control, Dr. Logan stated, although it has completely reversed original hopes for widespread effective and efficient housefly control. Insect resistance, he said, forcibly emphasizes our meagre knowledge of the physiology and ecology of insects, many species of which inhabited the earth thousands of years before man appeared.

"Although mosquitoes, for example, are considered one of the best known of all the insects," he remarked, "our knowledge of strains and subspecies, of their habits, dispersal and physiology, is definitely limited." This, he pointed out, emphasizes the need for encouraging further research.

An important factor in the war on insects, Dr. Logan went on, is the necessity of integrating insect control and sanitation with long-range social and economic planning. Development of modern environmental sanitation, together with an increasing standard of living, he said, has been responsible for elimination of insect-borne diseases from large areas of the world, and environmental sanitation will continue to be an important factor in this regard.

"It must, in fact, form an integral part of any plan for community improvement," he said. "A primary requirement, however, is that such programs be economically justified, which will necessitate, in many instances, a lowering of costs and the development of new and more economical techniques, designed specifically for particular areas throughout the world."

The discovery of DDT in 1936-37 and the further discovery in 1942, of its residual effect against houseflies, ushered in the "Golden Era" of insect control, Dr. Logan declared. Then, in rapid succession came discovery that other materials possess similar properties, until, today, such new synthetic toxicants as BHC, chlordane, dieldrin, aldrin, toxaphene, methoxychlor and dilan have been made available. In their use against sandflies, houseflies, fleas, lice, bedbugs and ticks, they have, he said, had a direct effect on the comfort and convenience of the people concerned and a decrease in the amount of disease caused by these vectors.

"It is evident," Dr. Logan declared, "that in the use of residual sprays man has developed a powerful new tool which, for the first time, gives him a highly efficient and an economical method of controlling insect-borne diseases anywhere in the world. In addition to residual spraying, other important methods of using the new insecticides have been demonstrated."

Dr. Logan praised highly the successful techniques, developed mainly by the U. S. Public Health Service, for control of rodents, including rat proofing of buildings, the use of land fill for refuse disposal and community wide rodent eradication drives. Throughout the world, he said, control of rat ectoparasites is being accomplished by DDT dusts.

"The availability of techniques," he said, in concluding, "is of no significance if their use is prohibited by social and economic factors. To insure success of the program it is of equal importance that engineers pay particular attention to the necessity of obtaining public understanding and support and recognize the need for planning both from an immediate and a long-range point of view. The World Health Organization has expressed one of the fundamental desires of the peoples of the world as 'physical, mental and social well-being of man.' Insect control can play a significant and increasingly important part in attainment of this objective."

New Canco Sales Managers

Continental Can Co., New York, recently announced appointment of three district sales managers, John S. Devlin, who has been with the firm for the past 14 years, becomes district sales manager of the Houston district. Mr. Devlin was formerly control officer in the head office in New York. In his new position he directs sales activities in Texas and New Mexico.

Bruce R. Petersen, who joined the firm in 1947, has been named sales manager of the Milwaukee district. He was formerly Boston district sales manager of Continental's Eastern Metal Division. J. R. Wallace becomes district sales manager, Metal Division, Boston district sales office. Mr. Wallace joined the company in 1934. Prior to his present assignment he was a salesman at the Syracuse district sales office.

At the same time Continental announced purchase of a 40-acre tract in Omaha, Neb., on which it will start construction in November of a one-story plant for the manufacture of metal containers. It is expected to be in production in 1953 and to employ approximately 500 persons, and to cover a floor space of 250,000 square feet.

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PCO's Meet in Houston Oct. 20-21-22

THE 20th annual convention of National Pest Control Association is being held at the Rice Hotel, Houston, Texas, October 20, 21, 22, 1952. Arden W. Price, W. B. McCloud & Co., Chicago, is general chairman and H. O. Abel, Abel Exterminating Co., Dallas and Houston, is Houston chairman. The theme for the meeting is "Competition and Private Enterprise." The program includes booth exhibits and an extensive ladies program. Monday afternoon's sessions are concerned with various aspects of advertising, and with insect resistance to insecticides. Two papers on sanitation are included in Tuesday morning's program. Wednesday morning is devoted to problems of termite control, and rodent control. Papers on these two subjects are being read concurrently. Wednesday afternoon is occupied by the business session. Following is the program of the convention in some detail:

Sunday—October 19

12:30 P.M.—Board of directors luncheon in the Jade Room on the second floor, Rice Hotel.
1:00 P.M.—Board of directors meeting —Jade Room.
3:30-5:00 P.M.—Reception, entertainment and refreshments, Sam Houston Room on the second floor—Rice Hotel.
Booth exhibitions will be all set up and welcome you.
Evening—Free for individual plans.

Monday Morning—October 20 General Session

9:00 A.M.—Convention called to order —Arden W. Price
9:45 A.M.—Annual message by the president—Robert C. Yeager
Treasurer's report—Charles V. Kyle
Business session—Robert C. Yeager, presiding
(a —Committee appointments
(b)—"Briefing" on any important items that any committees desire to present so "advance consideration" may be given prior to action that would be taken at the Business Session on Wednesday afternoon.
11:15 A.M.—"Serviceman's Manual and Supervisor's Handbook"—George L. Hockenyos
12:30 P.M.—Luncheon — Ballroom — Speaker—Dr. Fred K. Laurentz

Monday Afternoon General Session

2:00 P.M.—William O. Buettner, presiding
"Advertising in Regards to Bonded and Insured Guarantees"—C. Ed. Buehner
Open Forum, with emphasis on Classified Telephone Directory Advertising — Advertising Rates, Telephone Book "Headings"
3:30 P.M.—"Bringing Us Up-to-Date on Resistance Problems and Newer Insecticides"
(a)—"Current Status of Research on Insecticide-Resistant Insects" —William C. MacDuffie
(b)—Panel Discussion—Dr. Ralph E. Heal, presiding; Prof. Dial Martin, Lt. Col. Fred Downs, Prof. O. W. Rosewall, William C. MacDuffie
Among the pesticidal subjects discussed will be: Dieldrin, Malathon, Dilan, Synergists, Lindane, Vaporizers

Monday Evening—General Session

8:15 P.M.—W. I. Elo, presiding
"Pest Control in Europe"—Walter O. Blank
"General Trends in Business"—Dean Ellis M. Sowell

Tuesday Morning—October 21 General Session

9:15 A.M.—J. Wilfred Gunn, presiding
"Insurance in All Its Aspects"—R. Bill Livingston
Followed by Questions and Answers
10:15 A.M.—"Pest Control Is Changing"—Prof. J. J. Davis
10:45 A.M.—"PCO's Part in Sanitation Services"—Dr. Richard B. Eads
"Observations Regarding Sanitation Programs"—Carl B. Lien

Wednesday Morning—October 22 Concurrent Sessions

9:00 A.M.—(A)—*Termite Control*—A. H. Bender, presiding
"Biology of the Termite"—Dr. S. W. Bilsing
"Dry-Wood Termites—including Fumigation Operations and Precautions"—Robert B. Mesecher
"Termite Section of Pest Control Technology"—Dr. Ralph E. Heal
"Termite Problems from an Architect's Point of View"—Arne G. Engberg
"Termite Problems in Slab Construction"—Myron W. Smith
"Approved Reference Procedures of Subterranean Termite Control"—George L. Hockenyos
"Termite Inspection Reports" — Wayne K. Davis, W. B. Hill
9:00 A.M.—(B)—*Rodent Control—Occasional Pests—Fumigation*
1. Rodent Control—J. C. Redd, presiding
(a) — "Anticoagulants (Warfarin, Warficide, Tomorin, Pivalyl)"—Walter W. Dykstra
(b) — "Gimmicks, Gadgets and Thing-a-ma-Jigs"—Milton Caroline
(c)—Questions and Answers
2. Fumigation Problems—T. F. Winburn, presiding
(a)—"Spot Fumigants"
3. Occasional Pests—Harold Schnorrenberg, presiding
(a)—"Household Pests"—Prof. V. A. Little

Wednesday Afternoon General Session

2:00 P.M.—Robert C. Yeager, presiding
Business Session
(a)—Action on committee proposals and recommendations (Constitution and by-laws, ethics, etc.)
(b)—Public relations—J. J. Hess & J. Edwin Sameth
(c)—Standard procedures — Dr. Ralph E. Heal
(d)—Bids and specifications—William O. Buettner
(e)—Nominations and election of president and secretary-treasurer.
(f)—Any other business

Wednesday Evening

7:00 P.M.—Annual banquet
Introductions
Dancing—10:00 P.M. to 1:00 A.M.

Mennen Co. to Move

Mennen Co., Newark, N. J., recently announced that it expects to move at the beginning of the year into its new plant in Morris Township, N. J. The new structure will offer considerably increased manufacturing facilities, and will consolidate office, manufacture, and warehousing under one roof. Mennen has been located in Newark since it was founded 75 years ago.

AASGP Meets Jan. 27-29

Tentative program details of the 26th annual convention of the Association of America Soap & Glycerine Producers, to be held at the Waldorf-Astoria Hotel, New York, Tuesday, Wednesday and Thursday, January 27, 28 and 29, 1953, were announced recently by Roy Peet, manager and secretary of AASGP. General Carlos Romulo, Phillipine ambassador, recently accepted an invitation to speak at the banquet on the final evening of the meeting, Jan. 29.

The three-day meeting of the association opens Tuesday, Jan. 27, with an all-day meeting of the Fatty Acid Division. A group luncheon will be held on that day as on the following two days of the meeting. Names of the luncheon speakers will be announced at a later date.

The second day of the meeting, Wednesday, January 28, will be marked by the report of the president and other officers, as well as by a session dealing with the outlook for the industry and business in general.

A departure at this year's meeting is the charging of a registration fee of $10 for anyone wishing to attend discussion sessions only. A package price of $42.50 will be charged for the three-day meeting which in-

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cludes three luncheons and the banquet. Door prizes will be awarded during the meeting, as was done at the 1952 meeting for the first time.

James A. Reilly, executive vice-president of Colgate-Palmolive-Peet Co., Jersey City, N. J., is chairman of the convention committee.

Goes into Bankruptcy

Hygiene Products Ltd., Montreal, Province of Quebec, has gone into bankruptcy, it was announced recently. The firm was a manufacturer of sanitary chemicals.

Seeland to Penick

Frank Seeland, for the past seven years associated with Prentiss Drug & Chemical Co., New York, recently joined the insecticide division of S. B. Penick & Co., New York.

Powell Plant for Atlanta

John Powell & Co., New York, recently announced establishment of a new plant in Atlanta for the manufacture of DDT, toxaphene, and benzene hexachloride concentrates. Vincent Russo, formerly production manager of Powell's chemical plant in Huntsville, Ala., has been appointed general manager of the new Atlanta unit.

New P&G Lab

(*From Page* 47)

tific journals, books and patent files on soaps, synthetic detergents and related materials in the U.S. The main reading room is designed to give the greatest amount of reading comfort. Natural light from the northwest, free from glare, comes through the 15-foot windows that are all along one side of the reading room; there are three booths for microfilm users; and there are specially designed "drop shelves" in the stacks that serve as writing surfaces when making notes. The library works in close conjunction with the company's technical library in the M. A. & R. building in Ivorydale. The two libraries together contain over 17,000 volumes, forming one of the largest technical libraries in the chemical industry.

T.G.A. Plans for Convention

The board of directors of the Toilet Goods Association discussed at a recent meeting plans for the annual convention to be held in New York, at the Waldorf-Astoria Hotel, May 12, 13, and 14, 1953. Pierre Harang of Houbigant Sales, New York, was named chairman of the convention program committee, and Lamson Scovill of Scovill Manufacturing Co., Bridgeport, Conn. is chairman of the convention committee for 1953. At the same meeting Benson Storfer, president of Parfums Corday, Inc., New York, was elected a director of the association to replace Charles A. Mooney who resigned from the board.

Mr. Harang recently announced his committee to consist of the following members: Edward J. Breck, John H. Breck Inc.; Robert B. Brown, Bristol-Myers Products Co.; Paul Carey, Tussy Cosmetiques; Thomas B. Haire, publisher of *Cosmetics & Toiletries;* Frazer V. Sinclair, publisher of *Beauty Fashion.*

Indict Rendering Firms

Seven corporations and nine individuals are charged with conspiring to restrain and monopolize interstate commerce in the rendering industry in the Philadelphia area, according to a recent announcement by the Department of Justice. The charge is contained in an indictment returned by a Federal Grand Jury at Philadelphia, September 17.

The defendants puchase approximately 90 percent of the rendering material collected in the Philadelphia area. They are alleged to have agreed upon the prices to be paid for the purchase from suppliers, to have agreed not to solicit business from the customers of other renderers, and to have agreed to prevent any person from entering the rendering business and to force other renderers out of business in the Philadelphia area. The following are named as defendants:

Baugh & Sons Company, Philadelphia; Enterprise Animal Oil Company, Philadelphia, and William J. Smith, its president; Enterprise Tallow & Grease Company, Philadelphia; Keystone Rendering Company, Philadelphia, Adolf Klein, its president, and Frank Auerbach, its office manager; Mutual Rendering Company, Philadelphia, Harry Sage, its president, and Robert C. Sage, its secretary-treasurer; Van Iderstine Company, Long Island City, N. Y.; Wilson & Co., Chicago, and John F. Moran, general manager of its M. L. Shoemaker Company Division in Philadelphia; Francis X. Smith, partner in American Rendering Company, Delaware County, Pa.; Robert E. Smith, partner, Independent Rendering Company, Philadelphia, and J. Leon Mealey, doing business as P. Mealey & Sons, Gloucester, N. J.

PCOs to Meet in San Diego

The tenth annual convention of Pest Control Operators of California will be held at the Hotel Manor, San Diego, February 23 through 25, 1953. The event is to include an exhibit of new products in the field.

New Chlordane Folder

Velsicol Corp., Chicago, recently issued a folder entitled: "Control Chiggers with Chlordane". Information on the chiggers' mode of attack and their detection is given. The most effective way of using chlordane is indicated, and a table shows amount of each customary formulation required to treat one thousand square feet.

Inventory Rulings

National Production Authority recently removed a number of items from its list of scarce materials. Those still designated as scarce include Freon, pyrethrum, benzol, pine oil, and collapsible tubes. At the same time NPA further amended its inventory control order, NPA regulation 1. Materials still subject to practicable minimum working inventory limitation include Freon, pyrethrum, and collapsible tubes.

Skin Sterilization

(*From Page* 148)

sitivity to oleic acid, which would suggest that the skin fatty acids might play a decisive part in their removal. These include *tubercle bacilli, Haemophilus pertussis, Corynebacterium diphtheriae,* certain viruses and fungi. Further experiments are needed to define the part played by the unsaturated fatty acids in preventing such organisms from colonizing the skin.

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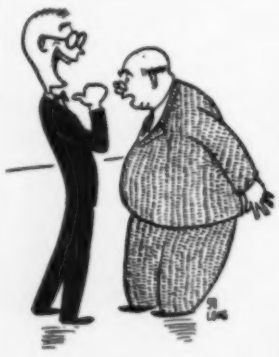

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Blank Hollingshead V.-P.

Otto J. Blank, formerly plant manager of R. M. Hollingshead Corp., Camden, N. J., has been appointed vice-president in charge of production, according to a recent announcement by Wibur H. Norton, president. As Hollingshead plant manager in charge of production for the past eight years, Mr. Blank has been responsible for production and shipping at the corporation's several plants in the Camden area and in Bowmanville, Ontario, Canada. In the newly created position of production vice-president, he continues to integrate production problems arising from manufacture of more than 500 different formulas for industrial, automotive, aviation and household products.

Before joining Hollingshead, Mr. Blank was associated for 28 years with Peck, Stow and Wilcox, Connecticut hardware manufacturers, as works manager and later as vice-president of operations. He also assisted the New York consulting engineer firms of J. H. Manning & Company and George S. May on plant layout, production methods, cost procedures and allied production problems.

NPCA Publishes New Roster

A new and revised membership roster was issued recently by National Pest Control Association, New York. The association's membership list includes 767 active members, six limited members, 67 allied members, and 30 honorary members, amounting to a total membership of 870. According to an estimate by the association over 65 per cent of the gross business of pest control service work in the United States is done by its members.

Sets Up Research Station

Establishment of a biological and agriculture research installation at Creve Coeur, Mo., has been announced recently by the organic chemicals division of Monsanto Chemical Co., St. Louis, Mo. The facilities, to be known as Creve Coeur Laboratories, are in addition to the division's 257-acre Hazelwood Farms established earlier this year to field-test agricultural chemicals. Operations on Hazelwood Farms are handled by personnel of Creve Coeur Laboratories. The staff at Creve Coeur Laboratories consists of three research groups under the direction of L. E. Weeks, P. P. Wallace and Dr. O. DeGarmo. The groups are engaged in research on insecticides and fungicides; soil conditioner applications; herbicides, and mycology, bacteriology and industrial preservation, respectively.

In addition to the laboratories proper, the installation includes 10,000 square feet of greenhouses for screening and experimental work.

Offers Pure Ortho

Solvay Process Division of Allied Chemical & Dye Corp., New York, recently announced perfection of a pilot plant technique for the manufacture of orthodichlorobenzene containing less than one-half per cent total impurities. It is currently in position to offer samples of this material for experimental use. Suggested uses of the product are as solvent in polishes. The material does not leave undesirable residual odors due to high boiling components such as trichlorobenzenes contained in commercial grades of orthodichlorobenzene.

Offers New Metal Cleaner

A new silver and plated ware cleaner and polisher called "Oz" was introduced recently by Homix Enterprises, New York. "Oz," a colorless liquid, is claimed to be non-poisonous, non-flammable, and harmless to any metal being cleaned and polished. According to the manufacturer a piece of tarnished silverware, dipped very briefly in a jar of "Oz," rinsed in clear water and dried with a soft cloth will be polished rapidly.

Tested and approved by U. S. Testing Co., "Oz" is packaged for consumer use in ten-ounce and 24-ounce jars, one dozen to a carton. For institutional or industrial use it comes in one-gallon jars, four to a carton.

Plant Maintenance Program

Sixty-six separate sessions on plant maintenance problems have been scheduled for the plant maintenance conference to be held in Cleveland, January 19-22, according to a recent announcement by Clapp & Poliak, Inc., New York. Eleven industries, including, automotive, chemical and oil, will be covered by the conference, which is to be held in conjunction with the plant maintenance show.

Members of the 335th Chemical Maintenance Company, Presidio of San Francisco, during unit field training at Camp Cooke, Calif., recently. The company is sponsored by Hockwald Chemical Co., San Francisco, and has as its primary mission providing echelon maintenance on all equipment and material procured by the Chemical Corps. The picture shows personnel of the organization performing maintenance work on a smoke generator.

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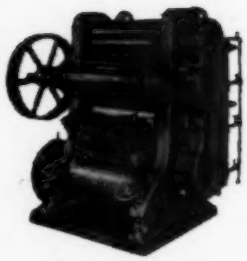

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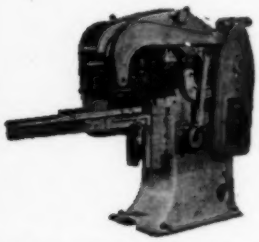

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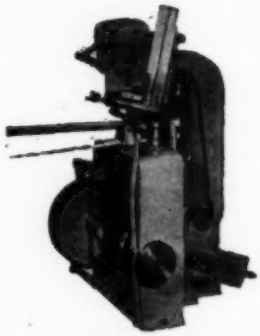

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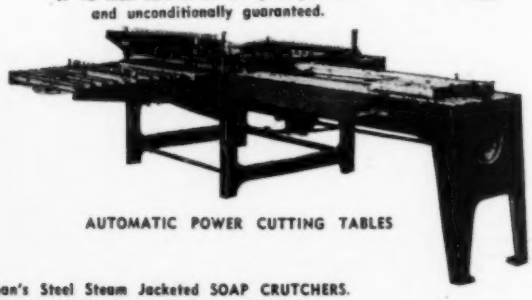

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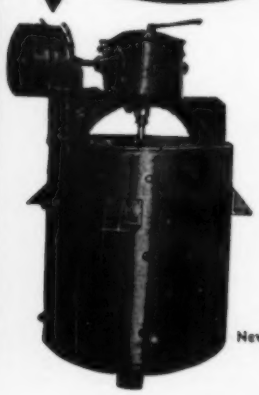

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Chemist or Soapmaker: Chemist or practical soapmaker, capable of taking charge of production of soap and sanitary items in small plant, wanted by Pittsburgh manufacturer. State age, qualifications, and salary expected. Address Box 610, c/o *Soap*.

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Chemist, Plant Manager: Highly experienced in sanitary chemical specialties to include floor waxes, polishes, disinfectants, sanitizers, soaps, cleaners, etc. Available for change. Address Box 613, c/o *Soap*.

Chemist, Industrial: Competent in sanitary, automotive chemicals, adhesives, polishes, protective coatings. Desires part-time work consultant basis, New York. Address Box 614, c/o *Soap*.

Sales: Representative on Pacific Coast to cover complete insecticide industry, also chemical, drug, and allied groups. Man with 20 years successful sales experience in mid-west, southwest and west coast, open for connection with manufacturer. Knows trade, products, buyers. Can produce business. For further details, write to Box 620, c/o *Soap*.

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Will Purchase for cash small going business manufacturing soap and cosmetic products. Will buy business including plant, or just brands and good will if reasonably well established. Wanted business where additional capital and sales effort have good chance to produce. Give details in confidence to Box 615, c/o *Soap*. Or through your attorney if preferable.

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For Sale: Proctor & Schwartz 6-Fan automatic soap chip dryer, 2-roll chilling unit, large roll 48" dia. Empire State foot presses. Soap frames. Allbright-Nell 4'x9' chilling rolls. Lehmann 4-roll W.C. 12"x36" steel mill. Blanchard #14 soap powder mill. Houchin 8-1/2"x16" 3-roll and 18"x30" 4-roll Granite stone mills. Kettles and tanks, iron, copper, aluminum and stainless. Dryers vac. & atmos. Jones automatic soap presses Slabbers and cutting tables, hand & power. Crutchers. Six-knife chipper. Filter presses 12" to 42". Wrapping & sealing machines. Powder, paste & liquid mixers. Rotex sifters. Filling machines. Grinders. Hammer mills. Colloid mills. Three-roll steel mills 8"x22" to 16"x40". Portable elec. agitators, pumps, etc. Send for bulletin. We buy your surplus equipment. Stein Equipment Co., 90 West Street, New York 6, N. Y. WOrth 2-5745.

Are You Posted on SYNTHETIC DETERGENTS and SOAPS & DETERGENTS? See page 140.

For Sale: 20-bbl. soap crutcher; 600# jacketed horizontal ribbon mixer; 50# to 2000# horizontal ribbon powder mixers. Broughton 50 cu. ft. double arm powder mixer. Steam jacketed steel mixing kettles. Stainless steel steam jacketed kettles. Stainless steel tanks up to 16,000 gal. Shriver 30" cast iron filter press, 35 plates, center feed, open delivery. Perry Equipment Corp., 1410 N. 6th St., Phila. 22, Pa.

For Sale: 1—Lehmann 12" Plodder; 1—Houchin 14"x36" 5-roll inclined watercooled mill, 30 H.P. motor; 1—Baker 20"x33" 5-roll mill, 55 H.P. motor; 1—Jones A, automatic horizontal soap press; 1—Jones automatic "K" press; 2—Package Machinery Co. model N soap wrappers; 3—Steel vertical jacketed soap crutchers, 2000 lb. and 1000 lb.; 1—6 knife soap chipper, m.d.; 1—4'x8' steel flaking or cooling roll; 1—Groen 300 gal. stainless jacketed kettle, 100 lb. w.p.; 1—Houchin No. 4 para block press; 1—Pneumatic Scale Packaging Line. Filter presses 12" to 42", powder fillers; powder, paste and liquid mixers; Rotex screens; Hammer mills; soap frames; Dopp jacketed kettles 100, 350, 600 gallon; Blackmer pumps; tanks; carton gluer-sealers. Ask us to quote on your requirements. Tell us what idle machines or plants you have for sale. Consolidated Products Co., Inc., 15-21 Park Row, New York 38, N. Y. Phone BArclay 7-0600. Inspect our stock at our warehouse, 331-341 Doremus Ave., Newark, N. J.

Latest American Book on SOAPS & DETERGENTS? see page 184.

Letters

(*From Page* 41)

tions applying to soaps and other chemical specialties. Ed.

Soap Course

Editor:

I am a graduate in oil chemistry and take special interest in soap making. The concern where I am employed subscribes to your monthly *Soap & Sanitary Chemicals,* which interests me to a great extent. In your July issue on Page 61 it is reported under the heading "Oil Chemists Short Course" that such courses are held. I wonder if the reports on such courses are published so that we in India may also be benefitted.

I shall be thankful if you will kindly let me know whom to contact for such short courses so that it may be possible to gain more knowledge on the subject of soap making.

Saffy Varawala
Bombay,
India

* * *

The course referred to in the letter was sponsored jointly by the American Oil Chemists' Society, 35 E. Wacker Drive, Chicago 1, and Rutgers University, New Brunswick, N. J., where the course was held. It is our understanding that the Journal of the American Oil Chemists' Society *will publish the papers presented during the course. The A.O.C.S. holds annual courses on various phases of oil and fats. They are the only formal courses dealing with such subjects that we know of, although papers dealing with the manufacture and application of soaps and synthetic detergents are presented at meetings of the Chemical Specialties Manufacturers Association, which meets twice a year and has a Soaps, Detergents and Sanitary Chemical Products Division and the Association of American Soap & Glycerine Producers, which meets once a year.* Soap & Sanitary Chemicals *itself is a sort of continuing textbook of the industries it covers. MacNair-Dorland Co., publishers of* Soap, *also have published several books dealing with the manufacture and application of soaps, synthetic detergents and other sanitary chemicals. Ed.*

Crowther in New Post

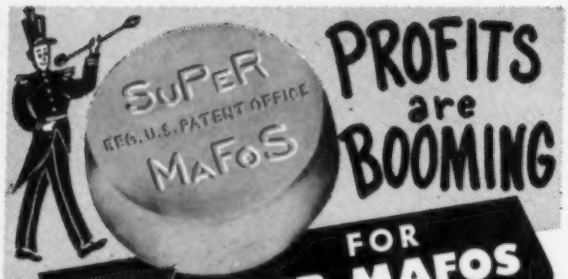
Appointment of John Crowther as assistant sales manager was announced recently by Stauffer Chemical Co., New York. Mr. Crowther, who is a chemical engineer, has been associated with Stauffer for seven years and was director of eastern division research, the main offices of which are in Chauncey, N. Y. Before joining Stauffer Mr. Crowther was a major in the U. S. Air Force. Prior to the war he was with the M. W. Kellogg Co., Jersey City, N. J.

Hild Issues New Circular

An illustrated circular carrying specifications for six floor machines and other pertinent information was issued recently by Hild Floor Machine Co., Chicago. All units shown are available with solution storage tanks, and feature Hild's shower-feed brush. How nine kinds of floor maintenance work may be done by using these machines with interchangeable attachments is illustrated in the bulletin.

Monsanto Names Thompson

Appointment of R. B. Thompson as director of the newly-created department of personnel relations for the Western Division of Monsanto Chemical Co., St. Louis., was announced recently. In his new post Mr. Thompson is in charge of all matters pertaining to personnel, safety, public relations, insurance and general office management. He was formerly assistant production manager of the division.



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Tale Ends

IN a recent address, Jervis Babb, prez. of Lever, summed up briefly to whom the modern business executive is responsible. He must account, first of all, to the consumer who uses his goods. Then, he is responsible for the happiness and security of his employes. He is responsible to his stockholders to make a buck or two in profit. He is responsible to his community and his neighbors. And, he is responsible to the nation as a whole. Outside of that, his life is a cinch and all he has to do is sit back in a fancy office and smoke four-bit cigars all day.

* * *

Maybe it was a dirty trick to play on the soap outfit running the why-I-buy contest, but we feel that the woman who sent in the answer should have received one of the top prizes. "I buy Blankety-Blank Soap because nobody in our house likes it and therefore it don't go so fast." Even if the newspaper which reported this item picked it out of the blue, it still is not as far from the awful truth as we might suspect. Some years ago, we knew an economy-conscious lady who bought old-fashioned olive oil castile soap in bars, cut it into cakes and aged it for a year before using. These cakes of saponified granite lasted, it seemed, forever.

* * *

Carl J. Peatee is the newest member of the Peatee Tribe of Toledo. He was born Sept. 22 and started life with red, curly hair, according to Don and Marsella Peatee, his parents. Carl is the fourth child, the third consecutive boy, the oldest being a girl. Don, the young fellow's father, is president of the Mellocraft Company in Toledo, and likewise sports a crop of curly, red hair. Funny how those things run in families. Well, Carl, old bean, here's mud in your eye and welcome to this vale of tears!

* * *

This chlorophyll thing just goes on and on. There seems to be no end. Accordingly, we desire to report that baby pants and diapers treated with chlorophyll are now on the market. Their maker announced them as a great boon to baby and mother, "especially baby to have plants in his pants, nature's own deodorant where it will do the most good." And that, gentle reader, is our chlorophyll report for the month. Or should we say chlorophyllin?

* * *

Nobody ever reads a label on anything,—or so it would seem to this observer of many years. Not even on an aerosol. According to a news story, this lady discovered her bedroom full of gnats and mosquitoes as the result of a window screen inadvertently removed. Rushing to a cupboard to grab an insecticide aerosol which she knew was there, said lady mistakenly grabbed up another aerosol which the light of her life had brought home that evening. She pushed the button and gave the wall and floor a nice coating of foamy lather. The wrong aerosol contained shaving cream!

* * *

The Federal Grand Jury investigation of the soap industry being carried on these many moons now at Newark, N. J., says a grapevine report, is about to close up its affairs and file a report. The purpose of the investigation ostensibly has been to search out evidence of a "soap trust" and violation of the Sherman, Clayton, etc. Acts. All of its hearings have been in secret, so how much in the way of evidence the jury dug up or did not dig up will not be known for a long, long time,—if ever. And if the investigation drew a blank, as we suspect,—never!

* * *

No, good friends, Jack Brunton has not changed his name. The "John Grunton" mentioned in the previous issue in the late news section and Jack Brunton are one and the same person. Just one of those things which happen in print shops, —some times, we suspect, not always by accident. But to set at rest the minds of those who might suspect that Mr. "Grunton" had taken over, we can state without fear of contradiction that one J. Brunton continues to direct the affairs of the Kolker Division of Diamond Alkali. Our error; our apologies!

* * *

Makers of all sorts of hair goo will perk up at the report that permanent waves for men are gaining favor in and about London, and that men there are wearing their hair "longer, fuller and waved." Personally, we find this news hard to take. If we must choose between those bristley brush type hair cuts effected by apparent escapees from Joliet or the Princeton crew squad, or a permanent wave on a male, we find a strong leaning toward the former. Permanent waves for men! Hand me that thar shootin' arn, Melissa!

* * *

Fifty-three years ago when he was a pupil in the third grade, one C. A. Hotwark made off with a piece of soap at a private school in Peterborough, England. To ease his conscience, he recently shipped a fifty-pound box of soap to the school. No doubt, a praiseworthy spirit and to be commended. But, something of a dangerous precedent, especially in America. If all the people who have stolen cakes of soap from public and private wash rooms over the past fifty years suddenly became conscious stricken and each sent a 50 lb. box, there would not be space in the storerooms of the nation to hold half of it.

Reminder

ADVERTISING never lets the object of your sales attention forget you! Never! It is a constant and repeated reminder that your firm is still in business, ready to sell him what he needs. Just like in the field of soaps, detergents, insecticides, deodorants, aerosols, floor products, and other chemical specialties, they'll never forget you if you advertise regularly in

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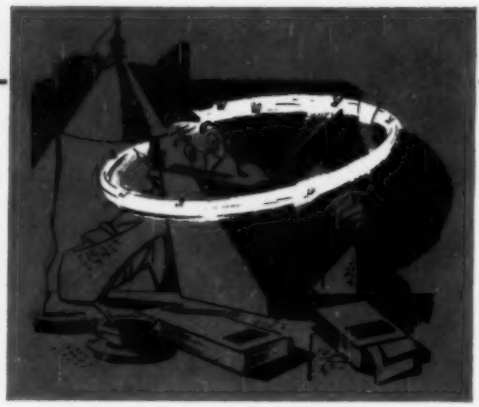
How Many "Bugs" in Your Aerosols?

NEW DEVELOPMENTS AND RESEARCH CHANGE THE PICTURE FOR 1953



Now is the time to work the "bugs" out of your aerosols. But there's no resting on the old facts, figures and formulations! Here are just a few of the *new factors* to be considered:

New Research on Synergists: Comparative studies prove without question the superiority of piperonyl butoxide as a synergist for allethrin as well as pyrethrins. Because of its greater synergistic value, piperonyl butoxide has proved in tests that it can be used at concentrations of ⅓ or less than certain competitive materials—with considerably superior results. Furthermore, piperonyl butoxide does not interfere with the activity of other active ingredients, nor does it cause separation of active ingredients in the formula, either during production or in storage. Whether formulations are simple or complex, whether geared to meet minimum TOTA standards or higher efficiency levels, piperonyl butoxide is definitely most effective and economical. It will pay you to check your present formulation against each of these factors.

Availability of Allethrin: U.S.I.'s new production has made available larger supplies of allethrin – and has already resulted in lower prices. Using allethrin alone or with other active ingredients offers a wide flexibility in the formulation of aerosols and other household insecticides. It is now available in Technical Grade (minimum 90%), Allethrin Extract 20% and Allethrin Extract No. 20 (2.5%). Are your formulations based on the latest information on allethrin? Why not ask us for full details?

Availability of Pyrethrum Extracts: After a long period of allocations, manufacturers are delighted to learn that pyrethrum extracts in all forms are available again. It has been demonstrated for a long time that pyrethrum when used with technical piperonyl butoxide is more efficient and economical than when used alone. Manufacturers now have the widest degree of flexibility they have ever enjoyed by having access to Pyrenone® concentrates, pyrethrum extracts, allethrin concentrates, and piperonyl butoxide.

IMPORTANT!

In addition to Pyrenone aerosol formulations combining piperonyl butoxide and pyrethrins, we are now prepared to offer complete formulations including piperonyl butoxide, allethrin and/or pyrethrins, thiocyanates, DDT or methoxychlor.

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